KENYA MEDICAL SUPPLIES AUTHORITY YOUR PARTNER IN HEALTHCARE

TENDER NO. GF-KEMSA-CONST - 5/OIT 6/2017-2018

TENDER FOR PROPOSED CONSTRUCTION OF KEMSA MODERN WAREHOUSE & OFFICE BLOCK

PLUMBING, DRAINAGE & FIRE FIGHTING, SPECIFICATIONS AND BILLS OF QUANTITIES

CLOSING DATE: 11TH DECEMBER, 2017

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SECTION I

INVITATION FOR TENDER (IFT)

Open International Tender (OIT)

FUNDING: THE GOVERNMENT OF KENYA, THE GLOBAL FUND AND THE KENYA MEDICAL SUPPLIES AUTHORITY

IFT NO.: GF-KEMSA-CONST - 5/OIT6/ 2017-2018

PROPOSED CONSTRUCTION OF KEMSA MODERN WAREHOUSE AND OFFICE BLOCK AT EMBAKASI, NAIROBI
Date: 17th November, 2017

1. The Government of The Republic of Kenya (GoK) and The Global Fund (GF) through The Kenya Medical Supplies Authority (KEMSA) has set aside funds for construction of a Modern Warehouse and Office Block on LR No. 9042/176 at Embakasi, Nairobi Kenya.
2. KEMSA, on behalf of GOK and GF now invite sealed tender (s) for the underlisted categories of works.

Tender Reference	Tender Description	NCA Registration Category	Tender Security Amount
GF-KEMSA-CONST -1/OIT6/2017-2018	Main Works	NCA 1	Kshs.67,000,000.00
GF-KEMSA-CONST-2/OIT6/2017-2018	ELECTRICAL INSTALLATION WORKS	NCA 1	Kshs.6,800,000.00
GF-KEMSA-CONST-3/OIT6/2017-2018	STRUCTURED CABLING, PABX & SECURITY INSTALLATIONS	NCA 1	Kshs.4,400,000.00
GF-KEMSA-CONST-4/OIT6/2017-2018	LIFTS INSTALLATIONS	NCA 4 and above	Kshs.630,000.00
GF-KEMSA-CONST-5/OIT6/2017-2018	PLUMBING, DRAINAGE & FIRE FIGHTING,	NCA 2 and above	Kshs.3,400,000.00
GF-KEMSA-CONST-6/OIT6/2017-2018	MECHANICAL VENTILATION, SMOKE VENTS AND AIR CONDITIONING	NCA 4 and above	Kshs.1,100,000.00
GF-KEMSA-CONST-7/OIT6/2017-2018	COLD ROOMS AND FREEZER INSTALLATIONS	NCA 3 and above	Kshs.2,200,000.00

3. Bidding will be conducted through the **Open International Tender (OIT**) procedures specified in the Government of Kenya Public Procurement and Asset Disposals Act, 2015.

4. Interested eligible bidders may obtain further information from KEMSA offices and inspect the bidding documents at the Procurement office situated at:

   Kenya Medical Supplies Authority
   13, Commercial Street, Industrial Area
   P.O B Box 47715-00100
   Telephone No.: +254 20 3922000/+254 719033000/+254 733606600
   Fax No.: +254203922400
   Email: procure@kemsa.co.ke

   On normal working days on Monday to Friday **09.00hrs and 16.00hrs except on Public Holidays or download at the IFMIS Supplier's Portal: http://supplier.treasury.go.ke/** KEMSA's website https://www.kemsa.co.ke Documents downloaded are free of charge and bidders are advised to register at the Procurement Office or via email at procure@kemsa.co.ke (***Refer to registration form in the tender document***).

5. A complete set of bidding documents (Hard Copy) in English may be purchased by interested bidders on the submission of **a written application** on company letterhead to the address below and upon payment of a non-refundable/non-transferable **fee of USD.13 or Kenya Shillings; 1,000/=**. The method of payment is i) by Cash or by Bankers cheque payable to "Kenya Medical Supplies Authority" KEMSA and ii) By direct deposit to the following accounts;

   Kenya shillings Account
   Account Name: *Kenya Medical Supplies Authority*
   Bank Name & Branch*: Co-operative Bank, Enterprise Road Branch*
   Account Number: 01141217405100

   United States Dollar Account
   Account Name: *Kenya Medical Supplies Authority*
   Bank Name & Branch*: Co-operative Bank, Enterprise Road Branch*
   Account Number: 02120217405100
   Swift Code: KCOOKENA

6. Complete serialized/paginated Bid Documents; **One original** and **a copy** in plain sealed envelopes clearly marked on top with the Tender Reference and Description and accompanied by a Bid Security of an amount as indicated in the respective Tender Documents in a freely convertible currency from Commercial Banks or Insurance Companies (Approved by The GOK Public Procurement Regulatory Authority) and should be addressed to:

   The Chief Executive Officer
   Kenya Medical Supplies Authority
   13, Commercial Street, Industrial Area
   P.O B Box 47715-00100
   Nairobi, Kenya.

   And must be deposited in Tender Box 2 Marked **Global Fund Tenders** at the reception on the Ground floor of KEMSA's Commercial Street Office in Nairobi on or before **11th December, 2017 at 10.00 a.m**. Bids will be opened immediately thereafter in the presence of Bidders' and or representatives who choose to attend.

7. Bulky tenders can be handed over to KEMSA **Procurement Director's** office for registration and safe keeping till the tender opening date.

8. Late bids shall **NOT** be accepted.

9. There will be a mandatory Site visit for all prospective bidders on **29th November, 2017 from 9.00am** at KEMSA warehouse in Embakasi, Nairobi. Thereafter there will be a pre-bid meeting for those who wish to attend.

Yours sincerely,

CHIEF EXECUTIVE OFFICER,
KENYA MEDICAL SUPPLIES AUTHORITY

REGISTRATION FORM FOR ONLINE TENDERERS/BIDDERS/SUPPLIERS

Tender No.: GF-KEMSA-CONST-5 /OIT 6/2017-2018 – Proposed Construction of KEMSA Modern Warehouse and Office block

NOTE: Please provide your details below for purposes of communication in case you download this tender document from IFMIS or KEMSA website.

Name of the firm:……..

Postal Address:……..

Telephone Contacts:……...……

Company email address:……..

Contact Person:……

Once completed please submit this form to the email below;

procure@kemsa.co.ke

SPECIAL NOTES

1. The Contractor is required to check the numbers of the pages of these Bills of Quantities against the contents stated on the Table of Contents and should he find missing, in duplicate or indistinct, he must inform the Procuring entity as described in this document at once and have the same rectified.

2. Should the Contractor be in doubt about the precise meaning of any item or figure for any reason whatsoever, he must inform the Procuring entity in order that the correct meaning may be decided before the date of submission of tenders.

3. No liability will be accepted nor any claim allowed in respect of errors in the Contractor's tender due to mistakes in these Bills of Quantities which should have been rectified in the manner described above.

4. The Tenderer shall not alter or otherwise qualify the text of this Tender Document. Any alteration or qualification made without any authority will be ignored and the text printed will be adhered to.

5. In case of Discrepancy between Tender Data Sheet and other sections of these Tender Documents, information in the Tender Data Sheet shall apply.

6. The bids shall be evaluated in accordance with evaluation criteria as detailed in the bid document.

7. Only Tenderers who score 70 points and above in the Technical Evaluation Stage shall qualify for further evaluation.

8. Special preference shall be given to the construction of the warehouse, flammable goods store, External Works and Civil works. Construction of the Office Block will commence not later than ten (10) months after the start of construction of the

PRE-BID SITE VISIT CERTIFICATE

KENYA MEDICAL SUPPLIES AUTHORITY

TENDER REFERENCE NO. GF-KEMSA-CONST-5 /OIT 6/2017-2018 PLUMBING, DRAINAGE & FIRE FIGHTING –

We confirm that M/s. ……..... was duly represented by ……. during the **Site Visit/ Pre-bid Briefing** on **29th November, 2017** from **9.00A.M to 2.00 P.M** at KEMSA Warehouse Embakasi Nairobi.

Signed: ……..……

CHIEF EXECUTIVE OFFICER
KENYA MEDICAL SUPPLIES AUTHORITY

SECTION II
INSTRUCTIONS TO TENDERERS

General/Eligibility/Qualifications/Joint venture/Cost of tendering

1.1 This Invitation for Tenders is open to all eligible tenderers for Works Contract as described in the tender documents. The successful tenderer will be expected to complete the Works by the Intended Completion Date specified in the tender documents.

1.2 All tenderers shall provide the Qualification Information, a statement that the tenderer (including all members of a joint venture and subcontractors) is not associated, or has not been associated in the past, directly or indirectly, with the Consultant or any other entity that has prepared the design, specifications, and other documents for the project or being proposed as Project Manager for the Contract. A firm that has been engaged by Kenya Medical Supplies Authority Ltd. to provide consulting services for the preparation or supervision of the Works, and any of its affiliates, shall not be eligible to tender.

1.3 All tenderers shall provide in the Form of Tender and Qualification Information, a preliminary description of the proposed work method and schedule, including drawings and charts, as necessary.

1.4 In the event that pre-qualification of potential tenderers has been undertaken, only tenders from pre-qualified tenderers will be considered for award of Contract. These qualified tenderers should submit with their tenders any information updating their original pre-qualification applications or, alternatively, confirm in their tenders that the originally submitted pre-qualification information remains essentially correct as of the date of tender submission.

Tender documents shall be accompanied by the following **Mandatory requirements** for preliminary evaluation:-

Mandatory Requirements

a) Certificate of Registration/Incorporation (*Applicable to all Bidders)*

b) Valid & Current Registration with **National Construction Authority (NCA 1) -** *(Applicable to all Bidders)*

c) Valid & Current Registration with **Energy Regulatory Commission** (ERC Class A-1) - *(Applicable to Electrical & Lift Bidders)*

d) Valid & Current County Government Plumbers Licenses - *(Applicable to Plumbing & Fire Fighting Bidders)*

e) Valid & Current Registration with The **Communication Authority** - *(Applicable to ICT & Security Bidders)*

f) Manuals and Materials Certificates as described in the Tables attached and Bills of Quantities - *(Applicable to all Bidders)*

g) Valid Tax Compliance Certificate - *(Applicable to all Bidders)*

h) Valid Tender Security of 150 days - *(Applicable to all Bidders)*

i) Duly Signed Anti-Corruption declaration form - *(Applicable to all Bidders)*

j) Duly signed non-Debarment declaration form. - *(Applicable to all Bidders)*

k) Pagination / Serialization of Tender Document- *(Applicable to all Bidders)*

l) Duly signed form of Tender - *(Applicable to all Bidders)*

m) Certificate of Site visit duly Signed and stamped by the procuring entity - *(Applicable to all Bidders)*

A tenderer who fails to meet the mandatory requirements shall be disqualified from further evaluation.

1.5 Where no pre-qualification of potential tenderers has been done**,** all tenderers shall include be required the following information and documents with their tenders, unless otherwise stated:

(a) copies of original documents defining the constitution or legal status, place of registration, and principal place of business; written power of attorney of the signatory of the tender to commit the tenderer

(b) total monetary value of construction work performed for each of the last five years:

(c) experience in works of a similar nature and size for each of the last five years, and details of work under way or contractually committed; and names and addresses of clients who may be contacted for further information on these contracts;

(d) Major items of construction equipment proposed to carry out the Contract and an undertaking that they will be available for the Contract.

(e) Qualifications and experience of key site management and technical personnel proposed for the Contract and an undertaking that they shall be available for the Contract.

(f) reports on the financial standing of the tenderer, such as profit and loss statements and auditor's reports for the past three years;

(g) evidence of adequacy of working capital for this Contract (access to line(s) of credit and availability of other financial resources);

(h) authority to seek references from the tenderer's bankers;

(i) information regarding any litigation, current or during the last five years, in which the tenderer is involved, the parties concerned and disputed amount; and

(j) Proposals for subcontracting components of the Works amounting to more than 10 percent of the Contract Price.

1.6 Tenders submitted by a joint venture of two or more firms as partners shall comply with the following requirements, unless otherwise stated:

(a) the tender shall include all the information listed in clause 1.5 above for each joint venture partner;

(b) the tender shall be signed so as to be legally binding on all partners;

(c) all partners shall be jointly and severally liable for the execution of the Contract in accordance with the Contract terms;

(d) one of the partners will be nominated as being in charge, authorized to incur liabilities, and receive instructions for and on behalf of all partners of the joint venture; and

(e) The execution of the entire Contract, including payment, shall be done exclusively with the partner in charge.

1.7 To qualify for award of the Contract, tenderers shall meet the following minimum qualifying criteria;

(a) annual volume of construction work of at least 2.5 times the estimated annual cashflow for the Contract;

(b) experience as main contractor in the construction of at least five works of a nature and complexity equivalent to the Works over the last 10 years (to comply with this requirement, works cited should be at least 70 percent complete);

(c) proposals for the timely acquisition (own, lease, hire, etc.) of the essential equipment listed as required for the Works;

(d) a Contract Manager with at least ten years' experience in works of an equivalent nature and volume, including no less than three years as Manager; and

(e) liquid assets and/or credit facilities, net of other contractual commitments and exclusive of any advance payments which may be made under the Contract, of no less than 2 months of the estimated payment flow under this Contract.

1.8 The figures for each of the partners of a joint venture shall be added together to determine the tenderer's compliance with the minimum qualifying criteria of clause 1.7 (a) and (e); however, for a joint venture to qualify, each of its partners must meet at least 25 percent of minimum criteria 1.7 (a), (b) and (e) for an individual tenderer, and the partner in charge at least 40 percent of those minimum criteria. Failure to comply with this requirement will result in rejection of the joint venture's tender. Subcontractors' experience and resources will not be taken into account in determining the tenderer's compliance with the qualifying criteria, unless otherwise stated.

1.9 Each tenderer shall submit only one tender, either individually or as a partner in a joint venture. A tenderer who submits or participates in more than one tender (other than as a subcontractor or in cases of alternatives that have been permitted or requested) will cause all the proposals with the tenderer's participation to be disqualified.

1.10 The tenderer shall bear all costs associated with the preparation and submission of his tender, and Kenya Medical Supplies Authority will in no case be responsible or liable for those costs.

1.11 The tenderer, at the tenderer's own responsibility and risk, is encouraged to visit and examine the Site of the Works and its surroundings, and obtain all information that may be necessary for preparing the tender and entering into a contract for construction of the Works. The costs of visiting the Site shall be at the tenderer's own expense.

1.12 The Kenya Medical Supplies Authority employees, committee members, board members and their relative (spouse and children) are not eligible to participate in the tender.

1.13 The price to be charged for the tender document shall be Kshs.1,000/.

1.14 The Kenya Medical Supplies Authority shall allow the tenderer to review the tender document free of charge before purchase.

2 Tender Documents

2.1 The complete set of tender documents comprises the documents listed below and any addenda issued in accordance with Clause 2.4.

(a) These Instructions to Tenderers
(b) Form of Tender and Qualification Information
(c) Conditions of Contract
(d) Appendix to Conditions of Contract
(e) Specifications
(f) Drawings
(g) Bills of Quantities
(h) Forms of Securities

2.2 The tenderer shall examine all Instructions, Forms to be filled and Specifications in the tender documents. Failure to furnish all information required by the tender documents, or submission of a tender not substantially responsive to the tendering documents in every respect will be at the tenderer's risk and may result in rejection of his tender.

2.3 A prospective tenderer making an inquiry relating to the tender documents may notify the Kenya Medical Supplies Authority in writing or by cable, telex or facsimile at the address indicated in the letter of invitation to tender. Kenya Medical Supplies Authority will only respond to requests for clarification received earlier than seven days prior to the deadline for submission of tenders. Copies of the Kenya Medical Supplies Authority's response will be forwarded to all persons issued with tendering documents, including a description of the inquiry, but without identifying its source.

2.4 Before the deadline for submission of tenders, Kenya Medical Supplies Authority may modify the tendering documents by issuing addenda. Any addendum thus issued shall be part of the tendering documents and shall be communicated in writing or by cable, telex or facsimile to all tenderers. Prospective tenderers shall acknowledge receipt of each addendum in writing to the Employer.

2.5 To give prospective tenderers reasonable time in which to consider an addendum in preparing their tenders, Kenya Medical Supplies Authority shall extend, as necessary, the deadline for submission of tenders, in accordance with Clause 4.2 here below.

3 Preparation of Tenders

3.1 All documents relating to the tender and any correspondence shall be in English language.

3.2 The tender submitted by the tenderer shall comprise the following:

(a) These Instructions to Tenderers, Form of Tender, Conditions of Contract, Appendix to Conditions of Contract and Specifications;

(b) Tender Security;

(c) Priced Bill of Quantities ;

(d) Qualification Information Form and Documents;

(e) Alternative offers where invited; and

(f) Any other materials required to be completed and submitted by the tenderers.

3.3 The tenderer shall fill in rates and prices for all items of the Works described in the Bill of Quantities. Items for which no rate or price is entered by the tenderer will not be paid for when executed and shall be deemed covered by the other rates and prices in the Bill of Quantities. All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause relevant to the Contract, as of 30 days prior to the deadline for submission of tenders, shall be included in the tender price submitted by the tenderer.

3.4 The rates and prices quoted by the tenderer shall only be subject to adjustment during the performance of the Contract if provided for in the Appendix to Conditions of Contract and provisions made in the Conditions of Contract.

3.5 The unit rates and prices shall be in Kenya Shillings.

3.6 Tenders shall remain valid for a period of one hundred and Twenty (120) days from the date of submission. However in exceptional circumstances, the Kenya Medical Supplies Authority may request that the tenderers extend the period of validity for a specified additional period. The request and the tenderers' responses shall be made in writing. A tenderer may refuse the request without forfeiting the Tender Security. A tenderer agreeing to the request will not be required or permitted to otherwise modify the tender, but will be required to extend the validity of Tender Security for the period of the extension, and in compliance with Clause 3.7 - 3.11 in all respects.

3.7 The tenderer shall furnish, as part of the tender, a Tender Security in the amount and form specified in the appendix to invitation to tenderers. This shall be in the amount not exceeding 2 percent of the tender price.

3.8 The format of the Tender Security should be in accordance with the form of Tender Security included in Section IV - Standard forms or any other form acceptable to Kenya Medical Supplies Authority. Tender Security shall be valid for 30 days beyond the validity of the tender.

3.9 Any tender not accompanied by an acceptable Tender Security shall be rejected. The Tender Security of a joint venture must define as "Tenderer" all joint venture partners and list them in the following manner: a joint venture consisting of"……","……",and "……".

3.10 The Tender Securities of unsuccessful tenderers will be returned within 28 days of the end of the tender validity period specified in Clause 3.6.

3.11 The Tender Security of the successful tenderer will be discharged when the tenderer has signed the Contract Agreement and furnished the required Performance Security.

3.12 The Tender Security may be forfeited

(a) if the tenderer withdraws the tender after tender opening during the period of tender validity;

(b) if the tenderer does not accept the correction of the tender price, pursuant to Clause 5.7;

(c) in the case of a successful tenderer, if the tenderer fails within the specified time limit to

(i) sign the Agreement, or

(ii) furnish the required Performance Security.

3.13 Tenderers shall submit offers that comply with the requirements of the tendering documents, including the basic technical design as indicated in the Drawings and Specifications. Alternatives will not be considered, unless specifically allowed in the invitation to tender. If so allowed, tenderers wishing to offer technical alternatives to the requirements of the tendering

documents must also submit a tender that complies with the requirements of the tendering documents, including the basic technical design as indicated in the Drawings and Specifications. In addition to submitting the basic tender, the tenderer shall provide all information necessary for a complete evaluation of the alternative, including design calculations, technical specifications, breakdown of prices, proposed construction methods and other relevant details. Only the technical alternatives, if any, of the lowest evaluated tender conforming to the basic technical requirements shall be considered.

3.14 The tenderer shall prepare one original of the documents comprising the tender documents as described in Clause 3.2 of these Instructions to Tenderers, bound with the volume containing the Form of Tender, and clearly marked **"ORIGINAL".** In addition, the tenderer shall submit copies of the tender, in the number specified in the invitation to tender, and clearly marked as **"COPIES".** In the event of discrepancy between them, the original shall prevail.

3.15 The original and all copies of the tender shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to sign on behalf of the tenderer, pursuant to Clause 1.5 (a) or 1.6 (b), as the case may be. All pages of the tender where alterations or additions have been made shall be initialed by the person or persons signing the tender.

3.16 Clarification of tenders shall be requested by the tenderer to be received by the procuring entity not later than 7 days prior to the deadline for submission of tenders.

3.17 The procuring entity shall reply to any clarifications sought by the tenderer within 3 days of receiving the request to enable the tenderer to make timely submission of its tender.

3.18 The tender security shall be in the amount of 0.5 – 2 per cent of the tender price.

4 Submission of Tenders

4.1 The tenderer shall seal the original and all copy of the tender in two inner envelopes and one outer envelope, duly marking the inner envelopes as "**ORIGINAL**" and "**COPY**" as appropriate. The inner and outer envelopes shall:

(a) be addressed to the Kenya Medical Supplies Authority at the address provided in the invitation to tender;

(b) bear the name and identification number of the Contract as defined in the invitation to tender; and

(c) provide a warning not to open before the specified time and date for tender opening.

4.2 Tenders shall be delivered to Kenya Medical Supplies Authority at the address specified above not later than the time and date specified in the invitation to tender. However, Kenya Medical Supplies Authority may extend the deadline for submission of tenders by issuing an amendment in accordance with Sub-Clause 2.5 in which case all rights and obligations of the Employer and the tenderers previously subject to the original deadline will then be subject to the new deadline.

4.3 Any tender received after the deadline prescribed in clause 4.2 will be

returned to the tenderer un-opened.

4.4 Tenderers may modify or withdraw their tenders by giving notice in writing before the deadline prescribed in clause 4.2. Each tenderer's modification or withdrawal notice shall be prepared, sealed, marked, and delivered in accordance with clause 3.13 and 4.1, with the outer and inner envelopes additionally marked "**MODIFICATION"** and "**WITHDRAWAL**", as appropriate. No tender may be modified after the deadline for submission of tenders.

4.5 Withdrawal of a tender between the deadline for submission of tenders and the expiration of the period of tender validity specified in the invitation to tender or as extended pursuant to Clause 3.6 may result in the forfeiture of the Tender Security pursuant to Clause 3.11.

4.6 Tenderers may only offer discounts to, or otherwise modify the prices of their tenders by submitting tender modifications in accordance with Clause 4.4 or be included in the original tender submission.

5 Tender Opening and Evaluation

5.1 The tenders will be opened by Kenya Medical Supplies Authority, including modifications made pursuant to Clause 4.4, in the presence of the tenderers' representatives who choose to attend at the time and in the place specified in the invitation to tender. Envelopes marked "**WITHDRAWAL**" shall be opened and read out first. Tenderers' and Employer's representatives who are present during the opening shall sign a register evidencing their attendance.

5.2 The tenderers' names, the tender prices, the total amount of each tender and of any alternative tender (if alternatives have been requested or permitted), any discounts, tender modifications and withdrawals, the presence or absence of Tender Security, and such other details as may be considered appropriate, will be announced by the Employer at the opening. Minutes of the tender opening, including the information disclosed to those present will be prepared by Kenya Medical Supplies Authority.

5.3 Information relating to the examination, clarification, evaluation, and comparison of tenders and recommendations for the award of Contract shall not be disclosed to tenderers or any other persons not officially concerned with such process until the award to the successful tenderer has been announced. Any effort by a tenderer to influence the Kenya Medical Supplies Authority's officials, processing of tenders or award decisions may result in the rejection of his tender.

5.4 To assist in the examination, evaluation, and comparison of tenders, the Kenya Medical Supplies Authority at his discretion, may ask any tenderer for clarification of the tender, including breakdowns of unit rates. The request for clarification and the response shall be in writing or by cable, telex or facsimile but no change in the price or substance of the tender shall be sought, offered, or permitted except as required to confirm the correction of arithmetic errors discovered in the evaluation of the tenders in accordance with Clause 5.7.

5.5 Prior to the detailed evaluation of tenders, the Kenya Medical Supplies Authority will determine whether each tender (a) meets the eligibility criteria defined in Clause 1.7;(b) has been properly signed; (c) is accompanied by the

required securities; and (d) is substantially responsive to the requirements of the tendering documents. A substantially responsive tender is one which conforms to all the terms, conditions and specifications of the tendering documents, without material deviation or reservation. A material deviation or reservation is one (a) which affects in any substantial way the scope, quality, or performance of the works; (b) which limits in any substantial way, inconsistent with the tendering documents, the Kenya Medical Supplies Authority's rights or the tenderer's obligations under the Contract; or (c) whose rectification would affect unfairly the competitive position of other tenderers presenting substantially responsive tenders.

5.6 If a tender is not substantially responsive, it will be rejected, and may not subsequently be made responsive by correction or withdrawal of the nonconforming deviation or reservation.

5.7 Tenders determined to be substantially responsive will be checked for any arithmetic errors. Errors will be corrected as follows:

(a) where there is a discrepancy between the amount in figures and the amount in words, the amount in words will prevail; and

(b) where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will prevail, unless in the opinion of the Employer, there is an obvious typographical error, in which case the adjustment will be made to the entry containing that error.

(c) In the event of a discrepancy between the tender amount as stated in the Form of Tender and the corrected tender figure in the main summary of the Bill of Quantities, the amount as stated in the Form of Tender shall prevail.

(d) The Error Correction Factor shall be computed by expressing the difference between the tender amount and the corrected tender sum as a percentage of the corrected Builder's Work (i.e. Corrected tender sum less P.C. and Provisional Sums)

(e) The Error Correction Factor shall be applied to all Builder's Work (as a rebate or addition as the case may be) for the purposes of valuations for Interim Certificates and valuation of variations.

(f) the amount stated in the tender will be adjusted in accordance with the above procedure for the correction of errors and, with concurrence of the tenderer, shall be considered as binding upon the tenderer. If the tenderer does not accept the corrected amount, the tender may be rejected and the Tender Security may be forfeited in accordance with clause 3.11.

5.8 Kenya Medical Supplies Authority will evaluate and compare only the tenders determined to be substantially responsive in accordance with Clause 5.5.

5.9 In evaluating the tenders, Kenya Medical Supplies Authority will determine for each tender the evaluated tender price by adjusting the tender price as follows:

(a) making any correction for errors pursuant to clause 5.7;

(b) excluding provisional sums and the provision, if any, for contingencies in the Bill of Quantities, but including Dayworks where priced competitively.

(c) making an appropriate adjustment for any other acceptable variations, deviations, or alternative offers submitted in accordance with clause 3.12; and

(d) making appropriate adjustments to reflect discounts or other price modifications offered in accordance with clause 4.6

5.10 Kenya Medical Supplies Authority reserves the right to accept or reject any variation, deviation, or alternative offer. Variations, deviations, and alternative offers and other factors which are in excess of the requirements of the tender documents or otherwise result in unsolicited benefits for the Employer will not be taken into account in tender evaluation.

5.11 The tenderer shall not influence the Kenya Medical Supplies Authority on any matter relating to his tender from the time of the tender opening to the time the Contract is awarded. Any effort by the Tenderer to influence the Employer or his employees in his decision on tender evaluation, tender comparison or Contract award may result in the rejection of the tender.

5.12 Firms incorporated in Kenya where indigenous Kenyans own 51% or more of the share capital shall be allowed a 10% preferential bias provided that they do not sub-contract work valued at more than 50% of the Contract Price excluding Provisional Sums to non-indigenous sub-contractor.

6 Award of Contract

6.1 Subject to Clause 6.2, the award of the Contract will be made to the tenderer whose tender has been determined to be substantially responsive to the tendering documents and who has offered the lowest evaluated tender price, provided that such tenderer has been determined to be (a) eligible in accordance with the provision of Clauses 1.2, and (b) qualified in accordance with the provisions of clause 1.7 and 1.8.

6.2 Notwithstanding clause 6.1 above, Kenya Medical Supplies Authority reserves the right to accept or reject any tender, and to cancel the tendering process and reject all tenders, at any time prior to the award of Contract, without thereby incurring any liability to the affected tenderer or tenderers or any obligation to inform the affected tenderer or tenderers of the grounds for the action.

6.3 The tenderer whose tender has been accepted will be notified of the award prior to expiration of the tender validity period in writing or by cable, telex or facsimile. This notification (hereinafter and in all Contract documents called

the "Letter of Acceptance") will state the sum (hereinafter and in all Contract documents called the "Contract Price") that the Employer will pay the Contractor in consideration of the execution, completion, and maintenance of the Works by the Contractor as prescribed by the Contract. At the same time the other tenderers shall be informed that their tenders have not been successful.

The contract shall be formed on the parties signing the contract.

6.4 The Agreement will incorporate all agreements between Kenya Medical Supplies Authority and the successful tenderer. Within 14 days of receipt the successful tenderer will sign the Agreement and return it to the Employer.

6.5 Within **21 days after receipt** of the Letter of Acceptance, the successful tenderer shall deliver to the Kenya Medical Supplies Authority a Performance Security in the amount stipulated in the Appendix to Conditions of Contract and in the form stipulated in the Tender documents. The Performance Security shall be in the amount and specified form.

6.6 Failure of the successful tenderer to comply with the requirements of clause 6.5 shall constitute sufficient grounds for cancellation of the award and forfeiture of the Tender Security.

6.7 Upon the furnishing by the successful tenderer of the Performance Security, Kenya Medical Supplies Authority Ltd. will promptly notify the other tenderers that their tenders have been unsuccessful.

6.8 Preference where allowed in the evaluation of tenders shall not be allowed for contracts not exceeding one year (12 months).

6.9 The tender evaluation committee shall evaluate the tender within 30 days of the validity period from the date of opening the tender.

6.10 The parties to the contract shall have it signed within 30 days from the date of notification of contract award unless there is an administrative review request.

6.11 Contract price variations shall not be allowed for contracts not exceeding one year (12 months).

6.12 Where contract price variation is allowed, the variation shall not exceed 20% of the original contract price.

6.13 Price variation request shall be processed by the procuring entity within 30 days of receiving the request.

6.14 Kenya Medical Supplies Authority may at any time terminate procurement proceedings before contract award and shall not be liable to any person for the termination.

6.15 Kenya Medical Supplies Authority shall give prompt notice of the termination to the tenderers and on request give its reasons for termination within 14 days of receiving the request from any tenderer.

6.17 A tenderer who gives false information in the tender document about its qualification or who refuses to enter into a contract after notification of contract award shall be considered for debarment from participating in future public procurement.

7 Corrupt and Fraudulent practices

7.1 Kenya Medical Supplies Authority requires that tenderers observe the highest standards of ethics during procurement process and execution of contracts. A tenderer shall sign a declaration that he has not and will not be involved in corrupt and fraudulent practices.

APPENDIX TO INSTRUCTIONS TO TENDERERS

APPENDIX TO INSTRUCTIONS TO TENDERERS

The following information for procurement of services shall complement or amend the provisions of the instructions to tenderers. Wherever there is a conflict between the provisions of the instructions to tenderers and the provisions of the Appendix, the provisions of the Appendix herein shall prevail over those of the instructions to tenderers.

SECTION III

TENDER EVALUATION CRITERIA

(a) Tender Evaluation Criteria

The following criteria will be used in the evaluation of all bids. The submission of the required documents will be used in the determination of the Completeness and Suitability of the Bid. Bids that do not contain all the information required will be declared non responsive and shall not be evaluated further.

1.1 Stage I – Mandatory Requirements

This stage of evaluation shall involve examination of the mandatory requirements as set out in the Tender Advertisement Notice or Letter of Invitation to Tender and any other conditions stated in the bid document.

a) Certificate of Registration/Incorporation *(Applicable to all Bidders)*

b) Valid Registration with **National Construction Authority (NCA 1)** - *(Applicable to all Bidders)*

c) Valid & Current Registration with **Energy Regulatory Commission** (ERC Class A-1) - *(Applicable to Electrical & Lift Bidders)*

d) Valid & Current County Government Plumbers Licenses - *(Applicable to Plumbing & Fire Fighting Bidders)*

e) Valid & Current Registration with The **Communication Authority (CA)** - *(Applicable to ICT & Security Bidders)*

f) Manuals and Materials Certificates as described in the Tables attached and Bills of Quantities - *(Applicable to all Bidders)*

g) Valid Tax Compliance Certificate - *(Applicable to all Bidders)*

h) Valid Tender Security of 150 days - *(Applicable to all Bidders)*

i) Duly Signed Anti-Corruption declaration form - *(Applicable to all Bidders)*

j) Duly signed non-Debarment declaration form - *(Applicable to all Bidders)*

k) Pagination / Serialization of Tender Document - *(Applicable to all Bidders)*

l) Duly signed form of Tender - *(Applicable to all Bidders)*

m) Certificate of Site visit duly Signed and stamped by the procuring entity - *(Applicable to all Bidders)*

A tenderer who fails to meet the mandatory requirements shall be disqualified from further evaluation.

STAGE 2: TECHNICAL EVALUATION

The tender document shall be examined based on clause 2.2 of the Instruction to Tenderers which states as follows:

In accordance with clause 2.2 of Instruction to Tenderers, the tenderers will be required to provide evidence for eligibility of the award of the tender by satisfying the employer of their eligibility under sub clause 2.1 of Instructions to Tenderers and their capability and adequacy of resources to effectively carry out the subject contract.
In order to comply with provisions of clause 2.2 of Instruction to tenderers, the tenderers shall be required;

a) *To fill the Standard Forms* provided in the bid document for the purposes of providing the required information. The tenderers may also attach the required information if they so desire;
b) *To supply equipment's/items which comply with the technical specifications set out in the bid document.* In this regard, the bidders shall be required to submit relevant technical brochures/catalogues with the tender document, highlighting the Catalogue Numbers of the proposed items. Such brochures/catalogues should indicate comprehensive relevant data of the proposed equipment/items which should include but not limited to the following:
   (i) Standards of manufacture;
   (ii) Performance ratings/characteristics;
   (iii) Material of manufacture;
   (iv) Electrical power ratings; and
   (v) Any other necessary requirements (Specify).

   The bid will then be analyzed, using the information in the technical brochures, to determine compliance with General and Particular technical specifications for the works as indicated in the tender document. The tenderer shall also fill in the Technical Schedule as specified in the tender document for Equipment and Items indicating the Country of Origin, Model/Make/Manufacturer and catalogue numbers of the Items/Equipment's they propose to supply.

1.2 Stage II -Technical Evaluation

The award of points considered in this section shall be as shown below:

	PARAMETER	MAXIMUM POINTS
(i)	Presentation of Bid document	2
(ii)	Compliance with Technical Specifications	40
(iii)	Key personnel	20
(iv)	Contract Completed in the last Ten (10) years	20
(v)	Schedules of on-going projects	3
(vi)	Schedules of contractors equipment	38
(vii)	Audited Financial Report for the last 3 years	15
(viii)	Evidence of Financial Resources	15
(ix)	Name, Address and Telephone of Banks (Contractor to provide)	2
(x)	Compliance to warehouse completion time	4
(xi)	Litigation History	1
	TOTAL	140

A bidder scoring less than 70% shall not be considered Technically responsive and therefore shall not be considered for financial evaluation.

The detailed scoring plan shall be as shown in table 1.

The detailed scoring plan shall be as shown in table 1 below: -

stage II : Technical Evaluation

Item	Description	Raw Points Scored	Max. Point	
1	**Compliance with Technical Specifications** • Full Compliant ----------40 • Non-compliant---------- 0 ***(Note: Tender Evaluation Committee to carry out analysis showing how decision on this requirement has been arrived at. Attach analysis on this as an Appendix)***	**40**	**40**	
2	Presentation and response (This includes binding the documents, neat presentation, separation and arrangement of requested information and general response to all requirements)		**2**	
3	**Key Personnel (Attach evidence)**			**20**
	Director of the firm • Holder of degree in relevant field ----------4 • Holder of diploma in relevant field ----------3 • Holder of certificate in relevant Engineering field---- 2 • Holder of trade test certificate in relevant Engineering field (At least three personnel)---------- --1		**4**	
	2No. degree/diploma holders of key personnel in relevant field • With over 10 years relevant experience ---------- 8 • With over 5 years relevant experience---------- 4 • With under 5 years relevant experience ---------- 2		**8**	
	4 No certificate holder of key personnel in relevant field • With over 10 years relevant experience---------- 4 • With over 5 years relevant experience ---------- 3 • With under 5 years relevant experience ----------1		**4**	
	8 No artisan (trade test certificate in relevant field) • Artisan with over 10 years relevant experience -- 4 • Artisan with under 10 years relevant experience --2		**4**	
iii	**Contract completed in the last Ten (10) years <u>Provide Evidence</u>** Warehouses - 2 projects of similar nature/ complexity and magnitude **Warehouses- Maximum - 12 marks** (a) Above Kshs.200. Million (6 marks for each project) (b) Kshs 150 Million - 199Million(4 marks for each project) (c) Kshs 100 Million – 149Million – (2 mark for each project) **Office Block/ office facilities – 8 marks** (d) Above Kshs.200 Million (4 marks for each project) (e) Kshs 150 Million – 299Million – (2 mark for each project) (f) Below Kshs 150 Million (1 mark for each project)		**20**	

iv	**On-going projects and their values <u>Provide Evidence</u>**			**3**
v	**Schedule of contractors equipment and transport (proof or evidence of ownership/Lease)** **a)Relevant Transport** • Trucks 2No. (4Mks) • Pickups 2No. (2mks) b) **Equipment's/tools** • Die machine 2No. (2mks) • Welding machine 2No. (2Mks) • PPRC welding machine 2No. (4 Mks) • Steel Grooving machine 1No. (2Mks) • Powered threading machine 1No. (2Mks) • 30bar pressure testing unit 4No. (4mks) • Calibrated flow meter 2No. 2Mks) • PPE Equipment's (2mks) • Drilling tools 2No. Sets (2mks) • Cutting tools 2No. Sets (2mks) c) **Vertical transport** • Mobile Hosting Crane 30T & above (6Mks) • Hoist 0.5T 2No. (2mks)			**38**
vi	**Financial report** a)Audited financial report (last three (3) years) • Provide Audited Accounts for 2016, 2015, 2014 (3 Mks) • Average Annual Turn-over equal to or greater than the annual Expected Turnover of the project ---------- (12mks) • Average Annual Turn-over above 50% but below 100% of the cost of the project ---------- (2Mks) • Average Annual Turn-over below 50% of the cost of the project ---------- 1Mks			**15**
	b)Evidence of Financial Resources (cash in hand, lines of credit, over draft facility, etc) • Has financial resources to finance the projected **monthly cash flow*** for three months ----------15 • Has financial resources equal to the projected **monthly cash flow***----------10			**15**

	• Has financial resources less the projected monthly cash flow*----------5 • Has not indicated sources of financial resources ---------- 0		
	Name, Address and Telephone of Banks		2
vii	Litigation History • Duly Filled ---------- 1 • Not filled ---------- 0		1
xi	Prepared for Compliance to warehouse Main contractor (to be appointed) completion time	4 Mks	4
	TOTAL		140

**Monthly Cash Flow =Tender Sum/Contract Period*

A bidder must score at least 75% total marks to qualify for further evaluation. (Score 105/140). The Technical Score will be weighted to 70.

A) Compliance with technical specifications

In this section, the bid will be analyzed to determine compliance with General and Particular technical specifications for the works as indicated in the tender document. The tenderer shall fill in the Technical Schedule as specified in the tender document for Equipment and Items indicating the Country of Origin, Model/Make/Manufacturer of the Item/Equipment they propose to supply.

The tenderer shall also submit relevant technical brochures/catalogues with the tender document, highlighting the catalogue Numbers of the proposed items. Such brochures/catalogues should indicate comprehensive relevant data of the proposed equipment/items which should include but not limited to the following:

a) Standards of manufacture;
b) Performance ratings/characteristics;
c) Material of manufacture;
d) Electrical power ratings; and
e) Any other necessary requirements (Specify).

Following the above analyses, where the proposed equipment is found not to conform to the stipulated specifications, the tender will be deemed Non–Responsive and will not be evaluated further.

B) Assessment of deviations

Pursuant to section 64 of the act, a tender is deemed responsive if it conforms to all the mandatory requirements and it **does not contain major** deviations. Section 23.2 of the instruction to tenderers, defines major deviations as

a) One that affects in a substantial way the scope, quality, completion timing, administration of works to be undertaken by the tenderer under the contract, inconsistent with the tender document; or
b) Which limits in any substantial way the rights of the employer or the tenderers obligations; or
c) Whose rectification would affect unfairly the competitive position of other tenderers presenting substantially responsive tenders.

Where the deviations are minor in the view of the tender committee, with the concurrence of the procuring entity representative, the evaluation committee shall quantify such deviations pursuant to section 64 (3) of the act which requires that a minor deviation shall:

a) Be quantified to the extent possible; and
b) Be taken into account in the evaluation and comparison of tenders.

Where the deviation in the view of the tender committee with the concurrence of the procuring entity representative is major, the tender shall be deemed **non-responsive and will not be evaluated further**

STAGE 3 - FINANCIAL EVALUATION

Upon completion of the technical evaluation, a detailed financial evaluation shall follow.

The evaluation shall be in **three stages**

a) Determination of Arithmetic errors
b) Comparison of Rates; and
c) Consistency of the Rates.

A) Determination of Arithmetic Errors

Arithmetic Errors will be corrected by the Procuring Entity as follows:

i) In the event of a discrepancy between the tender amount as stated in the form of Tender and the corrected tender figure in the Main summary of the Bills of Quantities, the amount as stated in the Form of Tender shall prevail. Pursuant to Section 82 of the Public Procurement and Asset Disposal Act 2015, the tender sum as submitted and read out during the tender opening shall be absolute and final and shall not be the subject of correction, adjustment or amendment in any way by any person or entity;

ii) Error correction factor shall be computed by expressing the difference between the amount and the corrected tender sum as a percentage of the corrected contract works (i.e. corrected tender sum less P.C; and Provisional Sums);

iii) The Error correction factor shall be applied to all contract works (as a rebate

or addition as the case may be) for the purposes of valuations for Interim Certificates and valuation of variations.

B) Comparison of rates

Items that are under priced or overpriced may indicate potential for non-delivery and front loading respectively. The committee shall promptly write to the tenderer asking for detailed breakdown of costs for any of the quoted items, relationship between those prices, proposed construction/installation methods and schedules.

The evaluation committee shall evaluate the responses and make an appropriate recommendation to the procuring entity giving necessary evidence. Such recommendations may include but not limited to:

a) Recommend no adverse action to the tenderer after a convincing response;
b) Employer requiring that the amount of the performance bond be raised at the expense of the successful tenderer to a level sufficient to protect the employer against potential financial losses;

c) Recommend non-award based on the response provided and the available demonstrable evidence that the scope, quality, completion timing, administration of works to be undertaken by the tenderer, would adversely be affected or the rights of the employer or the tenderers obligations would be limited in a substantial way.

C) **Consistency of the Rates**

The evaluation committee will compare the consistency of rates for similar items and note all inconsistencies of the rates for similar items.

FINANCIAL EVALUATION

The Tenderers who qualify under Technical Evaluation will have their Financial Bid evaluated and the lowest responsive bid submitted after analysis shall have their tender considered for award.

SECTION IV

CONDITIONS OF MAIN CONTRACT

GENERAL CONDITIONS OF CONTRACT

1 Definitions

1.1 In this Contract, except where context otherwise requires, the following terms shall be interpreted as indicated;

"Bill of Quantities" means the priced and completed Bill of Quantities forming part of the tender.

"Compensation Events" are those defined in Clause 24 hereunder.

The Completion Date" means the date of completion of the Works as certified by the Project Manager, in accordance with Clause 31.

"The Contract" means the agreement entered into between the Kenya Medical Supplies Authority and the Contractor as recorded in the Agreement Form and signed by the parties including all attachments and appendices thereto and all documents incorporated by reference therein to execute, complete, and maintain the Works,

"The Contractor" refers to the person or corporate body whose tender to carry out the Works has been accepted by Kenya Medical Supplies Authority

"The Contractor's Tender" is the completed tendering document submitted by the Contractor to Kenya Medical Supplies Authority

"The Contract Price" is the price stated in the Letter of Acceptance and thereafter as adjusted in accordance with the provisions of the Contract.

"Days" are calendar days; **"Months"** are calendar months.

"A Defect" is any part of the Works not completed in accordance with the Contract.

"The Defects Liability Certificate" is the certificate issued by Project Manager upon correction of defects by the Contractor.

"The Defects Liability Period" is the period named in the Contract Data and calculated from the Completion Date.

"Drawings" include calculations and other information provided or approved by the Project Manager for the execution of the Contract.

"Dayworks" are Work inputs subject to payment on a time basis for labour and the associated materials and plant.

"Employer", or the **"Procuring entity"** as defined in the Public Procurement Regulations (i.e. National or County Government administration, Universities, Public Institutions and Corporations, etc) is the party who employs the Contractor to carry out the Works.

"Equipment" is the Contractor's machinery and vehicles brought temporarily to the Site for the execution of the Works.

"The Intended Completion Date" is the date on which it is intended that the Contractor shall complete the Works. The Intended Completion Date may be revised only by the Project Manager by issuing an extension of time or an acceleration order.

"Materials" are all supplies, including consumables, used by the Contractor for incorporation in the Works.

"Plant" is any integral part of the Works that shall have a mechanical, electrical, chemical, or biological function.

"Project Manager" is the person named in the Appendix to Conditions of Contract (or any other competent person appointed by the Kenya Medical Supplies Authority and notified to the Contractor, to act in replacement of the Project Manager) who is responsible for supervising the execution of the Works and administering the Contract and shall be an "Architect" or a "Quantity Surveyor" registered under the Architects and Quantity Surveyors Act Cap 525 or an "Engineer" registered under Engineers Registration Act Cap 530.

"Site" is the area defined as such in the Appendix to Condition of Contract.

"Site Investigation Reports" are those reports that may be included in the tendering documents which are factual and interpretative about the surface and subsurface conditions at the Site.

"Specifications" means the Specifications of the Works included in the Contract and any modification or addition made or approved by the Project Manager.

"Start Date" is the latest date when the Contractor shall commence execution of the Works. It does not necessarily coincide with the Site possession date(s).

"A Subcontractor" is a person or corporate body who has a Contract with the Contractor to carry out a part of the Work in the Contract, which includes Work on the Site.

"Temporary works" are works designed, constructed, installed, and removed by the Contractor which are needed for construction or installation of the Works.

"A Variation" is an instruction given by the Project Manager which varies the Works.

"The Works" are what the Contract requires the Contractor to construct, install, and turnover to Kenya Medical Supplies Authority, as defined in the Appendix to Conditions of Contract.

2 Interpretation

2.1 In interpreting these Conditions of Contract, singular also means plural, male also means female or neuter, and the other way around. Headings have no significance. Words have their normal meaning in English Language unless

specifically defined. The Project Manager will provide instructions clarifying queries about these Conditions of Contract.

2.2 If sectional completion is specified in the Appendix to Conditions of Contract, reference in the Conditions of Contract to the Works, the Completion Date and the Intended Completion Date apply to any section of the Works (other than references to the Intended Completion Date for the whole of the Works).

2.3 The following documents shall constitute the Contract documents and shall be interpreted in the following order of priority;

a) Agreement,
b) Letter of Acceptance,
c) Contractor's Tender,
d) Appendix to Conditions of Contract,
e) Conditions of Contract,
f) Specifications,
g) Drawings,
h) Bill of Quantities,

i) Any other documents listed in the Appendix to Conditions of Contract as forming part of the Contract.

Immediately after the execution of the Contract, the Project Manager shall furnish both Kenya Medical Supplies Authority and the Contractor with two copies each of all the Contract documents. Further, as and when necessary the Project Manager shall furnish the Contractor [always with a copy to the Kenya Medical Supplies Authority] with three [3] copies of such further drawings or details or descriptive schedules as are reasonably necessary either to explain or amplify the Contract drawings or to enable the Contractor to carry out and complete the Works in accordance with these Conditions.

3 Language and Law

3.1 Language of the Contract and the law governing the Contract shall be English language and the Laws of Kenya respectively unless otherwise stated.

4 Project Manager's Decisions

4.1 Except where otherwise specifically stated, the Project Manager will decide contractual matters between Kenya Medical Supplies Authority and the Contractor in the role representing the Kenya Medical Supplies Authority.

5 Delegation

5.1 The Project Manager may delegate any of his duties and responsibilities to others after notifying the Contractor.

6 Communications

6.1 Communication between parties shall be effective only when in writing. A notice shall be effective only when it is delivered.

7 Subcontracting

7.1 The Contractor may subcontract with the approval of the Project Manager, but may not assign the Contract without the approval of Kenya Medical Supplies Authority in writing. Subcontracting shall not alter the Contractor's obligations.

8 Other Contractors

8.1 The Contractor shall cooperate and share the Site with other contractors, public authorities, utilities etc. as listed in the Appendix to Conditions of Contract and also with the Kenya Medical Supplies Authority, as per the directions of the Project Manager. The Contractor shall also provide facilities and services for them. Kenya Medical Supplies Authority may modify the said List of Other Contractors etc., and shall notify the Contractor of any such modification.

9 Personnel

9.1 The Contractor shall employ the key personnel named in the Qualification Information, to carry out the functions stated in the said Information or other personnel approved by the Project Manager. The Project Manager will approve any proposed replacement of key personnel only if their relevant qualifications and abilities are substantially equal to or better than those of the personnel listed in the Qualification Information. If the Project Manager asks the Contractor to remove a person who is a member of the Contractor's staff or work force, stating the reasons, the Contractor shall ensure that the person leaves the Site within seven days and has no further connection with the Work in the Contract.

10 Works

10.1 The Contractor shall construct and install the Works in accordance with the Specifications and Drawings. The Works may commence on the Start Date and shall be carried out in accordance with the Program submitted by the Contractor, as updated with the approval of the Project Manager, and complete them by the Intended Completion Date.

11 Safety and Temporary Works

11.1 The Contractor shall be responsible for the design of temporary works. However before erecting the same, he shall submit his designs including specifications and drawings to the Project Manager and to any other relevant third parties for their approval. No erection of temporary works shall be done until such approvals are obtained.

11.2 The Project Manager's approval shall not alter the Contractor's responsibility for design of the Temporary works and all drawings prepared by the Contractor for the execution of the temporary or permanent Works, shall be subject to prior approval by the Project Manager before they can be used.

11.3 The Contractor shall be responsible for the safety of all activities on the Site.

12 Discoveries

12.1 Anything of historical or other interest or of significant value unexpectedly discovered on Site shall be the property of Kenya Medical Supplies Authority The Contractor shall notify the Project Manager of such discoveries and carry out the Project Manager's instructions for dealing with them.

13 Work Program

13.1 Within the time stated in the Appendix to Conditions of Contract, the Contractor shall submit to the Project Manager for approval a program showing the general methods, arrangements, order, and timing for all the activities in the Works. An update of the program shall be a program showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining Work, including any changes to the sequence of the activities.

The Contractor shall submit to the Project Manager for approval an updated program at intervals no longer than the period stated in the Appendix to Conditions of Contract. If the Contractor does not submit an updated program within this period, the Project Manager may withhold the amount stated in the said Appendix from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue program has been submitted. The Project Manager's approval of the program shall not alter the Contractor's obligations. The Contractor may revise the program and submit it to the Project Manager again at any time. A revised program shall show the effect of Variations and Compensation Events.

14 Possession of Site

14.1 Kenya Medical Supplies Authority shall give possession of all parts of the Site to the Contractor. If possession of a part is not given by the date stated in the Appendix to Conditions of Contract, Kenya Medical Supplies Authority will be deemed to have delayed the start of the relevant activities, and this will be a Compensation Event.

15 Access to Site

15.1 The Contractor shall allow the Project Manager and any other person authorised by the Project Manager, access to the Site and to any place where work in connection with the Contract is being carried out or is intended to be carried out.

16. Instructions

16.1 The Contractor shall carry out all instructions of the Project Manager which are in accordance with the Contract.

16.2 If within seven days after receipt of a written notice from the Project Manager requiring compliance with Project Manager's instructions the Contractor does not comply therewith, the Kenya Medical Supplies Authority may employ and pay other persons to execute any work whatsoever which may be necessary to give effect to such instructions and all costs incurred in connection therewith shall be recoverable from the Contractor by the Employer as a debt or may be deducted by the Project Manager from any moneys due or to become due to the Contractor

under this Contract

17 Extension or Acceleration of Completion Date

17.1 The Project Manager shall extend the Intended Completion Date if a Compensation Event occurs or a variation is issued which makes it impossible for completion to be achieved by the Intended Completion Date without the Contractor taking steps to accelerate the remaining Work, which would cause the Contractor to incur additional cost. The Project Manager shall decide whether and by how much to extend the Intended Completion Date within 21 days of the Contractor asking the Project Manager in writing for a decision upon the effect of a Compensation Event or variation and submitting full supporting information. If the Contractor has failed to give early warning of a delay or has failed to cooperate in dealing with a delay, the delay caused by such failure shall not be considered in assessing the new (extended) Completion Date.

17.2 No bonus for early completion of the Works shall be paid to the Contractor by the Employer.

18 Management Meetings

18.1 A Contract management meeting shall be held monthly and attended by the Project Manager and the Contractor. Its business shall be to review the plans for the remaining Work and to deal with matters raised in accordance with the early warning procedure. The Project Manager shall record the minutes of management meetings and provide copies of the same to those attending the meeting and the Employer. The responsibility of the parties for actions to be taken shall be decided by the Project Manager either at the management meeting or after the management meeting and stated in writing to all who attended the meeting.

19 Early Warning

19.1 The Contractor shall warn the Project Manager at the earliest opportunity of specific likely future events or circumstances that may adversely affect the quality of the Work, increase the Contract Price or delay the execution of the Works. The Project Manager may require the Contractor to provide an estimate of the expected effect of the future event or circumstance on the Contract Price and Completion Date. The estimate shall be provided by the Contractor as soon as reasonably possible.

19.2 The Contractor shall cooperate with the Project Manager in making and considering proposals on how the effect of such an event or circumstance can be avoided or reduced by anyone involved in the Work and in carrying out any resulting instructions of the Project Manager.

20 Defects

20.1 The Project Manager shall inspect the Contractor's work and notify the Contractor of any defects that are found. Such inspection shall not affect the Contractor's responsibilities. The Project Manager may instruct the Contractor to search for a defect and to uncover and test any Work that the Project Manager considers may have a defect. Should the defect be found, the cost of uncovering and making good shall be borne by the Contractor, However, if there is no defect found, the cost of uncovering and making good shall be treated as a variation and added to the Contract Price.

20.2 The Project Manager shall give notice to the Contractor of any defects before the end of the Defects Liability Period, which begins at Completion, and is defined in the Appendix to Conditions of Contract. The Defects Liability Period shall be extended for as long as defects remain to be corrected.

20.3 Every time notice of a defect is given, the Contractor shall correct the notified defect within the length of time specified by the Project Manager's notice. If the Contractor has not corrected a defect within the time specified in the Project Manager's notice, the Project Manager will assess the cost of having the defect corrected by other parties and such cost shall be treated as a variation and be deducted from the Contract Price.

21 Bills of Quantities

21.1 The Bills of Quantities shall contain items for the construction, installation, testing and commissioning of the Work to be done by the Contractor. The Contractor will be paid for the quantity of the Work done at the rate in the Bills of Quantities for each item.

21.2 If the final quantity of the Work done differs from the quantity in the Bills of Quantities for the particular item by more than 25 percent and provided the change exceeds 1 percent of the Initial Contract price, the Project Manager shall adjust the rate to allow for the change.

21.3 If requested by the Project Manager, the Contractor shall provide the Project Manager with a detailed cost breakdown of any rate in the Bills of Quantities.

22 Variations

22.1 All variations shall be included in updated programs produced by the Contractor.

22.2 The Contractor shall provide the Project Manager with a quotation for carrying out the variations when requested to do so. The Project Manager shall assess the quotation, which shall be given within seven days of the request or within any longer period as may be stated by the Project Manager and before the Variation is ordered.

22.3 If the work in the variation corresponds with an item description in the Bills of Quantities and if in the opinion of the Project Manager, the quantity of work is not above the limit stated in Clause 21.2 or the timing of its execution does not cause the cost per unit of quantity to change, the rate in the Bills of Quantities shall be used to calculate the value of the variation. If the cost per unit of quantity changes, or if the nature or timing of the work in the variation does not correspond with items in the Bills of Quantities, the quotation by the Contractor shall be in the form of new rates for the relevant items of Work.

22.4 If the Contractor's quotation is unreasonable, the Project Manager may order the variation and make a change to the Contract price, which shall be based on the Project Manager's own forecast of the effects of the variation on the Contractor's costs.

22.5 If the Project Manager decides that the urgency of varying the Work would prevent a quotation being given and considered without delaying the Work, no quotation shall be given and the variation shall be treated as a Compensation Event.

22.6 The Contractor shall not be entitled to additional payment for costs that could have been avoided by giving early warning.

22.7 When the Program is updated, the Contractor shall provide the Project Manager with an updated cash flow forecast.

23 Payment Certificates, Currency of Payments and Advance Payments

23.1 The Contractor shall submit to the Project Manager monthly applications for payment giving sufficient details of the Work done and materials on Site and the amounts which the Contractor considers himself to be entitled to. The Project Manager shall check the monthly application and certify the amount to be paid to the Contractor within 14 days. The value of Work executed and payable shall be determined by the Project Manager.

23.2 The value of Work executed shall comprise the value of the quantities of the items in the Bills of Quantities completed, materials delivered on Site, variations and compensation events. Such materials shall become the property of Kenya Medical Supplies Authority once Kenya Medical Supplies Authority has paid the Contractor for their value .Thereafter, they shall not be removed from Site without the Project Manager's instructions except for use upon the Works.

23.3 Payments shall be adjusted for deductions for retention. Kenya Medical Supplies Authority shall pay the Contractor the amounts certified by the Project Manager within 30 days of the date of issue of each certificate. If Kenya Medical Supplies Authority makes a late payment, the Contractor shall be paid simple interest on the late payment in the next payment. Interest shall be calculated on the basis of number of days delayed at a rate three percentage points above the Central Bank of Kenya's average rate for base lending prevailing as of the first day the payment becomes overdue.

23.4 If an amount certified is increased in a later certificate or as a result of an award by an Arbitrator, the Contractor shall be paid interest upon the delayed payment

as set out in this clause. Interest shall be calculated from the date upon which the increased amount would have been certified in the absence of dispute.

23.5 Items of the Works for which no rate or price has been entered in will not be paid for by Kenya Medical Supplies Authority and shall be deemed covered by other rates and prices in the Contract.

23.6 The Contract Price shall be stated in Kenya Shillings. All payments to the Contractor shall be made in Kenya Shillings and foreign currency in the proportion indicated in the tender, or agreed prior to the execution of the Contract Agreement and indicated therein. The rate of exchange for the calculation of the amount of foreign currency payment shall be the rate of exchange indicated in the Appendix to Conditions of Contract. If the Contractor indicated foreign currencies for payment other than the currencies of the countries of origin of related goods and services Kenya Medical Supplies Authority reserves the right to pay the equivalent at the time of payment in the currencies of the countries of such goods and services. Kenya Medical Supplies Authority and the Project Manager shall be notified promptly by the Contractor of an changes in the expected foreign currency requirements of the Contractor during the execution of the Works as indicated in the Schedule of Foreign Currency Requirements and the foreign and local currency portions of the balance of the Contract Price shall then be amended by agreement between Kenya Medical Supplies Authority and the Contractor in order to reflect appropriately such changes.

23.7 In the event that an advance payment is granted, the following shall apply:-

a) On signature of the Contract, the Contractor shall at his request, and without furnishing proof of expenditure, be entitled to an advance of 10% (ten percent) of the original amount of the Contract. The advance shall not be subject to retention money.

b) No advance payment may be made before the Contractor has submitted proof of the establishment of deposit or a directly liable guarantee satisfactory to Kenya Medical Supplies Authority in the amount of the advance payment. The guarantee shall be in the same currency as the advance.

c) Reimbursement of the lump sum advance shall be made by deductions from the Interim payments and where applicable from the balance owing to the Contractor. Reimbursement shall begin when the amount of the sums due under the Contract reaches 20% of the original amount of the Contract. It shall have been completed by the time 80% of this amount is reached.

The amount to be repaid by way of successive deductions shall be calculated by means of the formula:

$$R = \frac{A(x^1 - x^{11})}{80 - 20}$$

Where:

R =the amount to be reimbursed

A =the amount of the advance which has been granted

X^1 = the amount of proposed cumulative payments as a percentage of the original amount of the Contract. This figure will exceed 20% but not exceed 80%.

X^{11} = the amount of the previous cumulative payments as a percentage of the original amount of the Contract. This figure will be below 80%but not less than 20%.

d) with each reimbursement the counterpart of the directly liable guarantee may be reduced accordingly.

24 Compensation Events

24.1 The following issues shall constitute Compensation Events:

(a) Kenya Medical Supplies Authority does not give access to a part of the Site by the Site Possession Date stated in the Appendix to Conditions of Contract.

(b) Kenya Medical Supplies Authority modifies the List of Other Contractors, etc., in a way that affects the Work of the Contractor under the Contract.

(c) The Project Manager orders a delay or does not issue drawings, specifications or instructions required for execution of the Works on time.

(d) The Project Manager instructs the Contractor to uncover or to carry out additional tests upon the Work, which is then found to have no defects.

(e) The Project Manager unreasonably does not approve a subcontract to be let.

(f) Ground conditions are substantially more adverse than could reasonably have been assumed before issuance of the Letter of Acceptance from the information issued to tenderers (including the Site investigation reports), from information available publicly and from a visual inspection of the Site.

(g) The Project Manager gives an instruction for dealing with an unforeseen condition, caused by Kenya Medical Supplies Authority or additional work required for safety or other reasons.

(h) Other contractors, public authorities, utilities, or the Employer does not work within the dates and other constraints stated in the Contract, and they cause delay or extra cost to the Contractor.

(i) The effects on the Contractor of any of Kenya Medical Supplies Authority risks.

(j) The Project Manager unreasonably delays issuing a Certificate of Completion.

(k) Other compensation events described in the Contract or determined by the Project Manager shall apply.

24.2 If a compensation event would cause additional cost or would prevent the Work being completed before the Intended Completion Date, the Contract Price shall be increased and/or the Intended Completion Date shall be extended. The Project Manager shall decide whether and by how much the Contract Price shall be increased and whether and by how much the Intended Completion Date shall be extended.

24.3 As soon as information demonstrating the effect of each compensation event upon the Contractor's forecast cost has been provided by the Contractor, it shall be assessed by the Project Manager, and the Contract Price shall be adjusted accordingly. If the Contractor's forecast is deemed unreasonable, the Project Manager shall adjust the Contract Price based on the Project Manager's own forecast. The Project Manager will assume that the Contractor will react competently and promptly to the event.

24.4 The Contractor shall not be entitled to compensation to the extent that Kenya Medical Supplies Authority's interests are adversely affected by the Contractor not having given early warning or not having co-operated with the Project Manager.

24.5 Prices shall be adjusted for fluctuations in the cost of inputs only if provided for in the Appendix to Conditions of Contract.

24.6 The Contractor shall give written notice to the Project Manager of his intention to make a claim within thirty days after the event giving rise to the claim has first arisen. The claim shall be submitted within thirty days thereafter.

Provided always that should the event giving rise to the claim of continuing effect, the Contractor shall submit an interim claim within the said thirty days and a final claim within thirty days of the end of the event giving rise to the claim.

25 Price Adjustment

25.1 The Project Manager shall adjust the Contract Price if taxes, duties and other levies are changed between the date 30 days before the submission of tenders for the Contract and the date of Completion. The adjustment shall be the change in the amount of tax payable by the Contractor.

25.2 The Contract Price shall be deemed to be based on exchange rates current at the date of tender submission in calculating the cost to the Contractor of materials to be specifically imported (by express provisions in the Contract Bills of Quantities or Specifications) for permanent incorporation in the Works. Unless otherwise stated in the Contract, if at any time during the period of the Contract exchange rates shall be varied and this shall affect the cost to the Contractor of such materials, then the Project Manager shall assess the net difference in the cost of such materials. Any amount from time to time so assessed shall be added to or deducted from the Contract Price, as the case may be.

25.3 Unless otherwise stated in the Contract, the Contract Price shall be deemed to have been calculated in the manner set out below and in sub-clauses 25.4 and

25.5 and shall be subject to adjustment in the events specified thereunder;

(i) The prices contained in the Contract Bills of Quantities shall be deemed to be based upon the rates of wages and other emoluments and expenses as determined by the Joint Building Council of Kenya (J.B.C.) and set out in the schedule of basic rates issued 30 days before the date for submission of tenders. A copy of the schedule used by the Contractor in his pricing shall be attached in the Appendix to Conditions of Contract.

(ii) Upon J.B.C. determining that any of the said rates of wages or other emoluments and expenses are increased or decreased, then the Contract Price shall be increased or decreased by the amount assessed by the Project Manager based upon the difference, expressed as a percentage, between the rate set out in the schedule of basic rates issued 30 days before the date for submission of tenders and the rate published by the J.B.C. and applied to the quantum of labour incorporated within the amount of Work remaining to be executed at the date of publication of such increase or decrease.

(iii) No adjustment shall be made in respect of changes in the rates of wages and other emoluments and expenses which occur after the date of Completion except during such other period as may be granted as an extension of time under clause 17.0 of these Conditions.

25.4 The prices contained in the Contract Bills of Quantities shall be deemed to be based upon the basic prices of materials to be permanently incorporated in the Works as determined by the J.B.C. and set out in the schedule of basic rates issued 30 days before the date for submission of tenders. A copy of the schedule used by the Contractor in his pricing shall be attached in the Appendix to Conditions of Contract.

25.5 Upon the J.B.C. determining that any of the said basic prices are increased or decreased then the Contract Price shall be increased or decreased by the amount to be assessed by the Project Manager based upon the difference between the price set out in the schedule of basic rates issued 30 days before the date for submission of tenders and the rate published by the J.B.C. and applied to the quantum of the relevant materials which have not been taken into account in arriving at the amount of any interim certificate under clause 23 of these Conditions issued before the date of publication of such increase or decrease.

25.6 No adjustment shall be made in respect of changes in basic prices of materials which occur after the date for Completion except during such other period as may be granted as an extension of time under clause 17.0 of these Conditions.

25.7 The provisions of sub-clause 25.1 to 25.2 herein shall not apply in respect of any materials included in the schedule of basic rates.

26 Retention

26.1 Kenya Medical Supplies Authority shall retain from each payment due to the Contractor the proportion stated in the Appendix to Conditions of Contract until Completion of the whole of the Works. On Completion of the whole of the Works, half the total amount retained shall be repaid to the Contractor and the remaining half when the Defects Liability Period has passed and the Project Manager has certified that all defects notified to the Contractor before the end of this period have been corrected.

27 Liquidated Damages

27.1 The Contractor shall pay liquidated damages to Kenya Medical Supplies Authority at the rate stated in the Appendix to Conditions of Contract for each day that the actual Completion Date is later than the Intended Completion Date. Kenya Medical Supplies Authority may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages shall not alter the Contractor's liabilities.

27.2 If the Intended Completion Date is extended after liquidated damages have been paid, the Project Manager shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment certificate. The Contractor shall be paid interest on the overpayment, calculated from the date of payment to the date of repayment, at the rate specified in Clause 23.30.

28 Securities

28.1 The Performance Security shall be provided to Kenya Medical Supplies Authority no later than the date specified in the Letter of Acceptance and shall be issued in an amount and form and by a reputable bank acceptable to Kenya Medical Supplies Authority, and denominated in Kenya Shillings. The Performance Security shall be valid until a date 30 days beyond the date of issue of the Certificate of Completion.

29 Dayworks

29.1 If applicable, the Dayworks rates in the Contractor's tender shall be used for small additional amounts of Work only when the Project Manager has given written instructions in advance for additional work to be paid for in that way.

29.2 All work to be paid for as Dayworks shall be recorded by the Contractor on Forms approved by the Project Manager. Each completed form shall be verified and signed by the Project Manager within two days of the Work being done.

29.3 The Contractor shall be paid for Dayworks subject to obtaining signed Dayworks forms.

30 Liability and Insurance

30.1 From the Start Date until the Defects Correction Certificate has been issued, the following are the Employer's risks:

(a) The risk of personal injury, death or loss of or damage to property (excluding the Works, Plant, Materials and Equipment), which are due to;

(i) use or occupation of the Site by the Works or for the purpose of the Works, which is the unavoidable result of the Works, or

(ii) negligence, breach of statutory duty or interference with any legal right by the Employer or by any person employed by or contracted to him except the Contractor.

(b) The risk of damage to the Works, Plant, Materials, and Equipment to the extent that it is due to a fault Kenya Medical Supplies Authority or in Kenya Medical Supplies Authority's design, or due to war or radioactive contamination directly affecting the place where the Works are being executed.

30.2 From the Completion Date until the Defects Correction Certificate has been issued, the risk of loss of or damage to the Works, Plant, and Materials is the Employer's risk except loss or damage due to;

(a) a defect which existed on or before the Completion Date.

(b) an event occurring before the Completion Date, which was not itself the Kenya Medical Supplies Authority's risk

(c) the activities of the Contractor on the Site after the Completion Date.

30.3 From the Start Date until the Defects Correction Certificate has been issued, the risks of personal injury, death and loss of or damage to property (including, without limitation, the Works, Plant, Materials, and Equipment) which are not Kenya Medical Supplies Authority's risk are Contractor's risks.

The Contractor shall provide, in the joint names of Kenya Medical Supplies Authority and the Contractor, insurance cover from the Start Date to the end of the Defects Liability Period, in the amounts stated in the Appendix to Conditions of Contract for the following events;

(a) loss of or damage to the Works, Plant, and Materials;

(b) loss of or damage to Equipment;

(c) loss of or damage to property (except the Works, Plant, Materials, and Equipment) in connection with the Contract, and

(d) personal injury or death.

30.4 Policies and certificates for insurance shall be delivered by the Contractor to the Project Manager for the Project Manager's approval before the Start Date. All such insurance shall provide for compensation required to rectify the loss or damage incurred.

30.5 If the Contractor does not provide any of the policies and certificates required, Kenya Medical Supplies Authority may effect the insurance which the Contractor should have provided and recover the premiums from payments otherwise due to the Contractor or, if no payment is due, the payment of the premiums shall be a debt due.

30.6 Alterations to the terms of insurance shall not be made without the approval of the Project Manager. Both parties shall comply with any conditions of insurance policies.

31 Completion and Taking Over

31.1 Upon deciding that the Works are complete, the Contractor shall issue a written request to the Project Manager to issue a Certificate of Completion of the Works. Kenya Medical Supplies Authority shall take over the Site and the Works within seven [7] days of the Project Manager's issuing a Certificate of Completion.

32 Final Account

32.1 The Contractor shall issue the Project Manager with a detailed account of the total amount that the Contractor considers payable to him by Kenya Medical Supplies Authority under the Contract before the end of the Defects Liability Period. The Project Manager shall issue a Defects Liability Certificate and certify any final payment that is due to the Contractor within 30 days of receiving the Contractor's account if it is correct and complete. If it is not, the Project Manager shall issue within 30 days a schedule that states the scope of the corrections or additions that are necessary. If the final account is still unsatisfactory after it has been resubmitted, the Project Manager shall decide on the amount payable to the Contractor and issue a Payment Certificate. Kenya Medical Supplies Authority shall pay the Contractor the amount due in the Final Certificate within 60 days.

33 Termination

33.1 Kenya Medical Supplies Authority or the Contractor may terminate the Contract if the other party causes a fundamental breach of the Contract. These fundamental breaches of Contract shall include, but shall not be limited to, the following;

(a) the Contractor stops work for 30 days when no stoppage of work is shown on the current program and the stoppage has not been authorized by the Project Manager;

(b) the Project Manager instructs the Contractor to delay the progress of the Works, and the instruction is not withdrawn within 30 days;

(c) the Contractor is declared bankrupt or goes into liquidation other than for a

reconstruction or amalgamation;

(d) a payment certified by the Project Manager is not paid by Kenya Medical Supplies Authority to the Contractor within 30 days (for Interim Certificate) or 60 days (for Final Certificate)of issue.

(e) the Project Manager gives notice that failure to correct a particular defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Project Manager;

(f) the Contractor does not maintain a security, which is required.

33.2 When either party to the Contract gives notice of a breach of Contract to the Project Manager for a cause other than those listed under Clause 33.1 above, the Project Manager shall decide whether the breach is fundamental or not.

33.3 Notwithstanding the above, the Employer may terminate the Contract for convenience.

33.4 If the Contract is terminated, the Contractor shall stop work immediately, make the Site safe and secure, and leave the Site as soon as reasonably possible. The Project Manager shall immediately thereafter arrange for a meeting for the purpose of taking record of the Works executed and materials, goods, equipment and temporary buildings on Site.

34 Payment Upon Termination

34.1 If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Project Manager shall issue a certificate for the value of the Work done and materials ordered and delivered to Site up to the date of the issue of the certificate. Additional liquidated damages shall not apply. If the total amount due to fundamental breaches of Contract shall include, but shall not be limited to, the following; exceeds any payment due to the Contractor, the difference shall be a debt payable by the Contractor.

34.2 If the Contract is terminated for the Kenya Medical Supplies Authority convenience or because of a fundamental breach of Contract by the Employer, the Project Manager shall issue a certificate for the value of the Work done, materials ordered, the reasonable cost of removal of equipment, repatriation of the Contractor's personnel employed solely on the Works, and the Contractor's costs of protecting and securing the Works.

34.3 Kenya Medical Supplies Authority may employ and pay other persons to carry out and complete the Works and to rectify any defects and may enter upon the Works and use all materials on the Site, plant, equipment and temporary works.

34.4 The Contractor shall, during the execution or after the completion of the Works under this clause remove from the Site as and when required, within such reasonable time as the Project Manager may in writing specify, any temporary buildings, plant, machinery, appliances, goods or materials belonging to or hired by him, and in default Kenya Medical Supplies Authority may (without being responsible for any loss or damage) remove and sell any such property of the Contractor, holding the proceeds less all costs incurred to the credit of the

Contractor.

Until after completion of the Works under this clause Kenya Medical Supplies Authority shall not be bound by any other provision of this Contract to make any payment to the Contractor, but upon such completion as aforesaid and the verification within a reasonable time of the accounts therefore the Project Manager shall certify the amount of expenses properly incurred by Kenya Medical Supplies Authority and, if such amount added to the money paid to the Contractor before such determination exceeds the total amount which would have been payable on due completion in accordance with this Contract the difference shall be a debt payable to the Employer by the Contractor; and if the said amount added to the said money be less than the said total amount, the difference shall be a debt payable by Kenya Medical Supplies Authority to the Contractor.

35 Release from Performance

35.1 If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of either Kenya Medical Supplies Authority or the Contractor, the Project Manager shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop Work as quickly as possible after receiving this certificate and shall be paid for all Work carried out before receiving it.

36 Corrupt Gifts and Payments of Commission

36.1 The Contractor shall not;

(a) Offer or give or agree to give to any person in the service of Kenya Medical Supplies Authority any gift or consideration of any kind as an inducement or reward for doing or forbearing to do or for having done or forborne to do any act in relation to the obtaining or execution of this or any other Contract for Kenya Medical Supplies Authority or for showing or forbearing to show favour or disfavour to any person in relation to this or any other contract for Kenya Medical Supplies Authority.

(b) Enter into this or any other contract with the Kenya Medical Supplies Authority in connection with which commission has been paid or agreed to be paid by him or on his behalf or to his knowledge, unless before the Contract is made particulars of any such commission and of the terms and conditions of any agreement for the payment thereof have been disclosed in writing to Kenya Medical Supplies Authority.

Any breach of this Condition by the Contractor or by anyone employed by him or acting on his behalf (whether with or without the knowledge of the Contractor) shall be an offence under the provisions of the Public Procurement Regulations issued under The Exchequer and Audit Act Cap 412 of the Laws of Kenya.

37 Settlement Of Disputes

37.1 In case any dispute or difference shall arise between Kenya Medical Supplies Authority or the Project Manager on his behalf and the Contractor, either during the progress or after the completion or termination of the Works, such dispute shall be notified in writing by either party to the other with a request to submit it to arbitration and to concur in the appointment of an Arbitrator within thirty days of the notice. The dispute shall be referred to the arbitration and final decision of a person to be agreed between the parties. Failing agreement to concur in the appointment of an Arbitrator, the Arbitrator shall be appointed by the Chairman or Vice Chairman of any of the following professional institutions;

(i) Architectural Association of Kenya

(ii) Institute of Quantity Surveyors of Kenya

(iii) Association of Consulting Engineers of Kenya

(iv) Chartered Institute of Arbitrators (Kenya Branch)

(v) Institution of Engineers of Kenya

On the request of the applying party. The institution written to first by the aggrieved party shall take precedence over all other institutions.

37.2 The arbitration may be on the construction of this Contract or on any matter or thing of whatsoever nature arising thereunder or in connection therewith, including any matter or thing left by this Contract to the discretion of the Project Manager, or the withholding by the Project Manager of any certificate to which the Contractor may claim to be entitled to or the measurement and valuation referred to in clause 23.0 of these conditions, or the rights and liabilities of the parties subsequent to the termination of Contract.

37.3 Provided that no arbitration proceedings shall be commenced on any dispute or difference where notice of a dispute or difference has not been given by the applying party within ninety days of the occurrence or discovery of the matter or issue giving rise to the dispute.

37.4 Notwithstanding the issue of a notice as stated above, the arbitration of such a dispute or difference shall not commence unless an attempt has in the first instance been made by the parties to settle such dispute or difference amicably with or without the assistance of third parties. Proof of such attempt shall be required.

37.5 Notwithstanding anything stated herein the following matters may be referred to arbitration before the practical completion of the Works or abandonment of the Works or termination of the Contract by either party:

(a) The appointment of a replacement Project Manager upon the said person ceasing to act.

(b) Whether or not the issue of an instruction by the Project Manager is empowered by these Conditions.

(c) Whether or not a certificate has been improperly withheld or is not in accordance with these Conditions.

(d) Any dispute or difference arising in respect of war risks or war damage.

37.6 All other matters shall only be referred to arbitration after the completion or alleged completion of the Works or termination or alleged termination of the Contract, unless Kenya Medical Supplies Authority and the Contractor agree otherwise in writing.

37.7 The Arbitrator shall, without prejudice to the generality of his powers, have powers to direct such measurements, computations, tests or valuations as may in his opinion be desirable in order to determine the rights of the parties and assess and award any sums which ought to have been the subject of or included in any certificate.

37.8 The Arbitrator shall, without prejudice to the generality of his powers, have powers to open up, review and revise any certificate, opinion, decision, requirement or notice and to determine all matters in dispute which shall be submitted to him in the same manner as if no such certificate, opinion, decision requirement or notice had been given.

37.9 The award of such Arbitrator shall be final and binding upon the parties.

SPECIAL CONDITIONS OF CONTRACT

Special conditions of contract shall supplement the general conditions of contract, wherever there is a conflict between the GCC and the SCC, the provisions of the SCC herein shall prevail over those in the GCC.

Special conditions of contracts with reference to the general conditions of contract.

SECTION V

APPENDIX TO CONDITIONS OF CONTRACT (SUBCONTRACT WORKS)

1.00 **APPENDIX TO CONDITIONS OF CONTRACT**

THE EMPLOYER IS:-

Name: KENYA MEDICAL SUPPLIES AUTHORITY.

Address: P. O. BOX 47715 - 00100, NAIROBI

Name of Authorized Representative: THE CHIEF EXECUTIVE OFFICER, KENYA MEDICAL SUPPLIES AUTHORITY

Telephone: ……

Facsimile: …….

THE PROJECT MANAGER IS:

Name: WORKS SECRETARY, MINISTRY OF TRANSPORT, INFRASTRUCTURE, HOUSING AND URBAN DEVELOPMENT, STATE DEPARTMENT OF PUBLIC WORKS

Address: P. O. BOX 30743 – 00100, NAIROBI

Telephone: +254 20272 3101

Facsimile: +254 202724504

Email: info@publicworks.go.ke

The name (and identification number) of the Contract is PROPOSED CONSTRUCTION OF KEMSA MODERN WAREHOUSE AND OFFICE BLOCK AT EMBAKASI, NAIROBI - **Tender Ref. No GF-KEMSA-CONST -5/OIT6/2017-2018**

The works in this contract comprise the construction of :
Modern warehouse - 14,680 M^2
Office block with 1No. basement and 6No. floors – 15,758 M^2
Flammable goods store – 307 M^2
Associated Civil and External Works
Associated Mechanical and Electrical Services Installations.

The Start Date shall be As agreed with the Employers.

The Intended Completion Period is **130 Weeks** for the whole works from the start date.

The Contractor shall submit a revised program for the Works within Seven days of delivery of the Letter of Acceptance.
The Site Possession Date shall be 14 days from the date of acceptance letter

The Site is located in Embakasi, KEMSA Land LR No. 9042/176 Embakasi.

The Defects Liability Period is 180 days AFTER DATE OF PRACTICAL COMPLETION.

Other Contractors, utilities, etc., to be engaged by the Employer on the Site include those for the execution of:

1. None ‘
2. “ ‘
3. “ ‘
4. “ ‘

The minimum insurance covers shall be;

1. The minimum cover for insurance of the Works and of plant and Materials in respect of the Contractor’s faulty design is:10% CONTRACT SUM
2. The minimum cover for loss or damage to Equipment is:10% CONTRACT SUM
3. The minimum for insurance of other property is:10% CONTRACT SUM
4. The minimum cover for personal injury or death insurance
5. For the Contractor’s employees: AS PER WORKMAN’S COMPENSATION
6. And for other people is:5% CONTRACT SUM

The following events shall also be Compensation Events: AS STATED IN THE CONDITIONS OF CONTRACT

The period between Program updates is 30 days.

The amount to be withheld for late submission of an updated Program is Full Certificate

The proportion of payments retained is TEN PER CENT (10%) OF CERTIFIED AMOUNT

The Limit of retention is FIVE PER CENT (5%) OF CONTRACT SUM

The Minimum monthly certificate shall be in the amount of 2% (minimum) of Contract Price / Contract Sum

The Price Adjustment Clause SHALL NOT APPLY. THIS IS A FIXED PRICE CONTRACT

The liquidated damages for the whole of the Subcontract Works are KENYA SHILLINGS FIVE HUNDRED THOUSAND (KSHS.100,000.00) PER WEEK OR PART THEREOF

The Performance Security shall be for the following minimum amounts equivalent as a percentage of the Contract Price **FIVE PERCENT (5%).**

The Completion Period for the Works is **130 Weeks**

Bidders are allowed to bid in any freely convertible currency. The rate of exchange for comparison purpose shall be the CBK rate on the tender opening date.

The schedule of basic rates used in pricing by the Contractor is as attached *[Contractor to attach]*.

Clause 25.3 (KABCEC clauses) shall not apply. The bidder shall instead quote for prices from material from reputed manufacturers or suppliers for material listed.

Advance Payment **SHALL NOT** be granted. Clause 23.7 is not applicable

Special preference shall be given to the construction of the warehouse, flammable goods store, External Works and Civil works. The office block will commence upon satisfactory progression and / or on completion of the warehouse, flammable goods store, External Works and Civil works on Instruction from the Project Manager in consultation with the client. However, the Contractor will not be entitled to claims for loss of profit and other related costs / expenses in relation to delay of commencement office block

SECTION VI

STANDARD FORMS

NOTES ON THE SAMPLE FORMS

1 *Form of Invitation to Tender* - form to be completed by the Kenya Medical Supplies Authority

2 *Form of Tender* - The form of tender must be completed by the tenderer and submitted with the tender documents. It must also be duly signed by duly authorized representatives of the tenderer.

3 *Letter of Acceptance* this form letter will be used to communicate the award to the successful tenderer

4 *Form of Agreement* - The Form of Agreement shall not be completed by the tenderer at the time of submitting the tender. The Contract Form shall be completed after contract award and should incorporate the accepted contract price.

5 *Form*-of *Tender Security* - When required by the tender documents the tender shall provide the tender security either in the form included herein or in another format acceptable to the Kenya Medical Supplies Authority.

6 *Performance Security Form*- The performance security form should not be completed by the tenderers at the time of tender preparation. Only the successful tenderer will be required to provide performance security in the form provided herein or in another form acceptable to the Kenya Medical Supplies Authority.

7 *Bank Guarantee for Advance Payment Form* - When Advance payment is requested for by the successful bidder and agreed by the Kenya Medical Supplies Authority, this form must be completed fully and duly signed by the authorized officials of the bank.

8 *Qualification Information* - this form must be completed fully and duly signed by the bidder.

9 *Tender Questionnaire* - this form must be completed fully and duly signed by the bidder.

10 *Confidential Business Questionnaire Form* - This form must be completed by the tenderer and submitted with the tender documents.

11. *Statement of Foreign Currency Requirement* – this form is not applicable to this tender.

12. *Details of Sub-Contractors* - This form must be completed by the tenderer and submitted with the tender documents.

13. *Request for Review Form* This form shall only be used after tender evaluation if a bidder disagrees with the decisions of the Procuring Entity.

14. *Declaration of Undertaking* (Integrity Statement)

15. *Non - Debarment Declaration* - This form must be completed by the tenderer and submitted with the tender documents.

16. *Site Visit Declaration Form* – This form is for information only. A pre-bid site visit certificate has been issued elsewhere in this document and shall only be filled during the pre-bid site visit in the manner prescribed therein.

FORM OF INVITATION FOR TENDERS

_____*[date]*

To: TENDERER'S NAME_____

P. O. BOX _____

_____

_____

Dear Sirs:

RE: _____

You have been prequalified to tender for the above project.

We hereby invite you and other prequalified tenderers to submit a tender for the execution and completion of the above Contract.

A complete set of tender documents may be purchased by you from _____

Upon payment of a non-refundable fee of _____

All tenders must be accompanied by ONE (1) copy of both Technical and Financial Proposals and a security in the form and amount specified in the tendering documents, and must be delivered to _____, or be addressed to _____ _____. Tenders will be opened immediately thereafter, in the presence of tenderers' representatives who choose to attend.

Please confirm receipt of this letter immediately in writing by cable/facsimile or telex.

Yours faithfully,

_____ Authorized Signature

_____ Name and Title

QUALIFICATION INFORMATION

1. **Individual Tenderers or Individual Members of Joint Ventures**

1.1 Constitution or legal status of tenderer (attach copy or Incorporation Certificate);

Place of registration: _____

Principal place of business _____

Power of attorney of signatory of tender _____

1.2 Total annual volume of construction work performed in the last five years

Year	**Volume**	
	Currency	**Value**

1.3 Work performed as Main Contractor on works of a similar nature and volume over the last five years. Also list details of work under way or committed, including expected completion date.

Project Name	**Name of Client and Contact Person**	**Type of Work Performed and Year of Completion**	**Value of Contract**

1.4 Major items of Contractor's Equipment proposed for carrying out the Works. List all information requested below. Refer also to Clause 1.7(c) of the Instructions to Tenderers

Item of Equipment	**Description, Make and age (years)**	**Condition (new, good, poor) and number available**	**Owned, leased (from whom?), or to be purchased (from whom?)**

1.5 Qualifications and experience of key personnel proposed for administration and execution of the Contract. Attach biographical data. Refer also to clause 1.5(e) of the Instructions to Tenderers and Clause 9.1 of the Conditions of Contract

Position	Name	Years of experience (general)	Years of experience in proposed position

1.6 Financial reports for the last five years: balance sheets, profit and loss statements, auditor's reports, etc. List below and attach copies.

_____
_____
_____
_____

1.7 Evidence of access to financial resources to meet the qualification requirements: cash in hand, lines of credit, etc. List below and attach copies of supportive documents.

_____
_____
_____

1.8 Name, address and telephone, telex and facsimile numbers of banks that may provide reference if contacted by Kenya Medical Supplies Authority

_____
_____
_____

1.9 Statement of compliance with the requirements of Clause 1.2 of the Instructions to Tenderers.

_____
_____
_____

2.0 Proposed program (work method and schedule) for the whole of the Works.

3.0 **Joint Ventures**

The information listed in 1.1 – 1.10 above shall be provided for each partner of the joint venture.

Attach the power of attorney of the signatory(ies) of the tender authorizing signature of the tender on behalf of the joint venture

Attach the Agreement among all partners of the joint venture (and which is legally binding on all partners), which shows that:

a) all partners shall be jointly and severally liable for the execution of the Contract in accordance with the Contract terms;

b) one of the partners will be nominated as being in charge, authorized to incur liabilities and receive instructions for and on behalf of any and all partners of the joint venture; and

c) the execution of the entire Contract, including payment, shall be done exclusively with the partner in charge.

Bidder's Signature: ----------Official Stamp ----------

Date: **----------**

TENDER QUESTIONNAIRE

Please fill in block letters.

1. Full names of tenderer

   _____

2. Full address of tenderer to which tender correspondence is to be sent (unless an agent has been appointed below)

   _____

3. Telephone number (s) of tenderer

   _____

4. Facsimile number of tenderer

   _____

5. Name of tenderer's representative to be contacted on matters of the tender during the tender period

   _____

6. Details of tenderer's nominated agent (if any) to receive tender notices. This is essential if the tenderer does not have his registered address in Kenya (name, address, telephone, telex)

   _____

   _____

   _____

_____

Signature of Tenderer

CONFIDENTIAL BUSINESS QUESTIONNAIRE FORM

You are requested to give the particulars indicated in Part 1; either Part 2(a), 2(b) or 2 (c) whichever applies to your type of business; and Part 3.

You are advised that it is a serious offence to give false information on this form.

Part 1 – General

1.1 Business Name
……

1.2 Location of Business Premises. ……

1.3 Plot No…… Street/Road ……

Postal Address ……..……...……..

Tel No. ……..…. Fax ……. E mail ……...…….

1.4 Nature of Business ,…….……

1.5 Registration Certificate No.……

1.6 Maximum Value of Business which you can handle at any one time – Kshs……

1.7 Name of your Bankers ……Branch …….

Part 2 (a) – Sole Proprietor

2a.1 Your Name in Full ……..…….. Age ……

2a.2 Nationality …… Country of Origin ……

- Citizenship Details …….

Part 2 (b) Partnership

2b.1 Given details of Partners as follows:

2b.2

Name	Nationality	Citizenship Details	Shares
1……			
2……			
3……			
4……			

Part 2 (c) – Registered Company

2c.1 Private or Public …….

2c.2 State the Nominal and Issued Capital of Company-

Nominal Kshs. ……

Issued Kshs. ……

2c.3 Given details of all Directors as follows

Name	Nationality	Citizenship Details	Shares
1……			
2..……			
3..……			
4..……			
5……			

Part 3 – Eligibility Status

3.1 Are you related to an Employee, Committee Member or Board Member of Kenya Medical Supplies Authority ? Yes _____ No_____

3.2 If answer in '3.1' is **YES** give the relationship.
……
……
……
……

3.3 Does an Employee, Committee Member, Board Member of Kenya Medical Supplies Authority sit in the Board of Directors or Management of your Organization, Subsidiaries or Joint Ventures? Yes_____ No_____

3.4 If answer in '3.3' above is **YES** give details.
……
……
……

3.5 Has your Organization, Subsidiary Joint Venture or Sub-contractor been involved in the past directly or indirectly with a firm or any of it's affiliates that have been engaged by Kenya Medical Supplies Authority to provide consulting services for preparation of design, specifications and other documents to be used for procurement of the goods under this invitation? Yes_____ No_____

3.6 If answer in '3.5' above is **YES** give details.
……
……
……

3.7 Are you under a declaration of ineligibility for corrupt and fraudulent practices? YES_____ No_____

3.8 If answer in '3.7' above is **YES** give details:
……
……
……

3.9 Have you offered or given anything of value to influence the procurement process? Yes _____No_____

3.10 If answer in '3.9' above is **YES** give details

……

……

……

I DECLARE that the information given on this form is correct to the best of my knowledge and belief.

Date …….. Signature of Candidate

- *If a Kenya Citizen, indicate under "Citizenship Details" whether by Birth, Naturalization or registration.*

DECLARATION OF UNDERTAKING (INTEGRITY STATEMENT)

Anti – Corruption Policy in the Procurement Process

Undertaking By Bidder On Anti – Corruption Policy / Code of Conduct And Compliance Program

The governments of Kenya is committed to fighting corruption in all its forms and in all its institutions to ensure that all the government earned revenues are utilized prudently and for the purpose intended with a view to promoting economic development as the country work towards actualizing Vision 2030.

Here at KEMSA and also being one of the government entities mandated under the government Legal Notice number 466 of 2004 to procure, warehouse and distribute Essential Medicines and Medical Supplies to all the public health facilities in Kenya, on behalf of the government, we are highly committed to fighting any form of corruption in our organization to ensure that all the monies that the government entrust with us, is optimally and prudently utilized for the benefits of all the people we serve.

The following is a requirement that every Bidder wishing to do business with KEMSA must comply with:

(1) Each bidder must submit a statement, as part of the tender documents, in the format given and which must be signed personally by the Chief Executive Officer or other appropriate senior corporate officer of the bidding company and, where relevant, of its subsidiary in Kenya. If a tender is submitted by a subsidiary, a statement to this effect will also be required of the parent company, signed by its Chief Executive Officer or other appropriate senior corporate officer.

(2) Bidders will also be required to submit similar No-bribery commitments from their subcontractors and consortium partners; the bidder may cover the subcontractors and consortium partners in its own statement, provided the bidder assumes full responsibility.

(3) a) Payment to agents and other third parties shall be limited to appropriate compensation for legitimate services.

b) Each bidder will make full disclosure in the tender documentation of the beneficiaries and amounts of all payments made, or intended to be made, to agents or other third parties (including political parties or electoral candidates) relating to the tender and, if successful, the implementation of the contract.

c) The successful bidder will also make full disclosure [quarterly or semi- annually] of all payments to agents and other third parties during the execution of the contract.

d) Within six months of the completion of the performance of the contract, the successful bidder will formally certify that no bribes or other illicit commissions have been paid. The final accounting shall include brief details of the goods and services provided that are sufficient to establish the legitimacy of the payments made.

e) Statements required according to subparagraphs (b) and (d) of this paragraph will have to be certified by the company's Chief Executive Officer, or other appropriate senior corporate officer.

(4) Tenders which do not conform to these requirements shall not be considered.

(5) If the successful bidder fails to comply with its No-bribery commitment, significant sanctions will apply. The sanctions may include all or any of the following:

a) Cancellation of the contract;

b) Liability for damages to the public authority and/or the unsuccessful competitors in the bidding possibly in the form of a lump sum representing a pre-set percentage of the contract value (liquidated).

(6) Bidders shall make available, as part of their tender, copies of their anti-Bribery Policy/Code of Conduct, if any, and of their-general or project - specific - Compliance Program.

(7) The Government of Kenya through Kenya Anti-Corruption Commission has made special arrangements for adequate oversight of the procurement process and the execution of the contract. Those charged with the oversight responsibility will have full access if need be to all documentation submitted by Bidders for this contract, and to which in turn all Bidders and other parties involved or affected by the project shall have full access (provided, however, that no proprietary information concerning a bidder may be disclosed to another bidder or to the public).

1. MEMORANDUM (FORMAT)

(Clause 41, 62 and 66 of Kenya Public Procurement and Asset Disposal Act 2015)

This company _____*(name of company)* has issued, for the purposes of this tender, a Compliance Program copy attached -which includes all reasonable steps necessary to assure that the No-bribery commitment given in this statement will be complied with by its managers and employees, as well as by all third parties working with this company on the public sector projects or contract including agents, consultants, consortium partners, subcontractors and suppliers')"

Authorized Signature:_____

Name and Title of Signatory: _____

NON - DEBARMENT DECLARATION

We (***insert the name of the company / supplier***) ----------declares and guarantees that no director, sub-contractor or any person who has any controlling interest in our organization has been debarred from participating in a procurement proceeding.

Name ……Signature……..Date ……

Company Seal / Business Stamp

SITE VISIT DECLARATION FORM

PROPOSED CONSTRUCTION OF KEMSA WAREHOUSE AND OFFICE BLOCK

I/We……of……..
do hereby declare that I/We have visited the site in the company of the below mentioned consultant and fully understand the scope and sequence of works.

COMPANY REPRESENTATIVE

NAME: …….

DESIGNATION: …….

Date …….

OFFICIAL STAMP

KEMSA REPRESENTATIVE

NAME:…….

SIGNATURE:……..

DATE:……..

OFFICIAL STAMP

Signed …….

Date …….

TENDER SECURITY FORM

(Amend accordingly if provided by Insurance Company)

Whereas ……..[name of the tenderer]

(hereinafter called "the tenderer")has submitted its tender dated……..[date of submission of tender] for the provision of ……..

[name and/or description of the services]

(hereinafter called "the Tenderer")……

KNOW ALL PEOPLE by these presents that WE……

of……having registered office at

[name of Procuring Entity](hereinafter called "the Bank")are bound unto……..

[name of Procuring Entity](hereinafter called "the Procuring Entity") in the sum of …….

for which payment well and truly to be made to the said Procuring Entity, the Bank binds itself, its successors, and assigns by these presents. Sealed with the Common Seal of the said Bank this_____ day of 20_____.

THE CONDITIONS of this obligation are:
1. If the tenderer withdraws its Tender during the period of tender validity specified by the tenderer on the Tender Form; or
2. If the tenderer, having been notified of the acceptance of its Tender by the PROCURING ENTITY during the period of tender validity:

(a) fails or refuses to execute the Contract Form, if required; or
(b) fails or refuses to furnish the performance security, in accordance with the instructions to tenderers;

we undertake to pay to the Procuring Entity up to the above amount upon receipt of its first written demand, without the Procuring Entity having to substantiate its demand, provided that in its demand the Procuring Entity will note that the arnount claimed by it is due to it, owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.
This guarantee will remain in force up to and including thirty (30) days after the period of tender validity, and any demand in respect thereof should reach the Bank not later than the above date.

[signature of the bank]

DETAILS OF SUB-CONTRACTORS

If the Tenderer wishes to sublet any portions of the Works under any heading, he must give below details of the sub-contractors he intends to employ for each portion.

Failure to comply with this requirement may invalidate the tender.

(1) Portion of Works to be sublet: ……..…

(i) Full name of Sub-contractor
and address of head office: ……

……

……

(ii) Sub-contractor's experience
of similar works carried out
in the last 3 years with
Contract value:……..…

……

……

(2) Portion of Works to sublet:
……

(i) Full name of Sub-contractor
and address of head office: ……

……

……

(ii) Sub-contractor's experience
of similar works carried out
in the last 3 years with
contract value: ……..

……

……

_____ _____
[Signature of Tenderer] Date

BANK GUARANTEE FOR ADVANCE PAYMENT FORM

***To* ……..**

Gentlemen and/or Ladies:

In accordance with the payment provision included in the special conditions of contract, which amends the general conditions of contract to provide for advance payment,
……

[name and address of tenderer][hereinafter called "the tenderer"] shall deposit with the Procuring entity a bank guarantee to guarantee its proper and faithful performance under the said clause of the contract in an amount of …… …… *[amount of guarantee in figures and words]*.

We, the…… *[bank or financial institution],* as instructed by the tenderer, agree unconditionally and irrevocably to guarantee as primary obligator and not as surety merely, the payment to the Procuring entity on its first demand without whatsoever right of objection on our part and without its first claim to the tenderer, in the amount not exceeding…… ……...*[amount of guarantee in figures and words]*.

We further agree that no change or addition to or other modification of the terms of the Contract to be performed thereunder or of any of the Contract documents which may be made between the Procuring entity and the tenderer, shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition, or modification.

This guarantee shall remain valid and in full effect from the date of the advance payment received by the tenderer under the Contract until *[date]*.

Yours truly,

Signature and seal of the Guarantors _____

[name of bank or financial institution]

_____

[address]

_____

[date]

PERFORMANCE SECURITY FORM

To: ……

WHEREAS…… …….[name of tenderer]

(hereinafter called "the tenderer") has undertaken, in pursuance of Contract No._____[reference number of the contract] dated _____20_____ to supply……..

[Description services](Hereinafter called "the contract")

AND WHEREAS it bas been stipulated by you in the said Contract that the tenderer shall furnish you with *a* bank guarantee by a reputable bank for the sum specified therein as security for compliance with the Tenderer's performance obligations in accordance with the Contract.

AND WHEREAS we have agreed to give the tenderer a guarantee:

THEREFORE WE hereby affirm that we are Guarantors and responsible to you, on behalf of the tenderer, up to a total of …… ……. *[amount of the guarantee in words and figures],* and we undertake to pay you, upon your first written demand declaring the tenderer to be in default under the Contract and without cavil or argument, any sum or sums within the limits of …… ……*[amount of guarantee]* as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

This guarantee is valid until the _____ day of 20_____

_____

Signature and seal of the Guarantors

_____

[name of bank or financial institution]

_____

[address]

_____ [date]

METHOD STATEMENT

The Tenderer is required to give a brief description herebelow of how the tenderer plans to execute the works (The tenderer may add more pages if required).

STATEMENT OF FOREIGN CURRENCY REQUIREMENTS

(See Clause 23] of the Conditions of Contract)

In the event of our Tender for the execution of_____

_____(*name of Contract*) being accepted, we would require in accordance with Clause 21 of the Conditions of Contract, which is attached hereto, the following percentage:

(Figures)…… (Words)……

of the Contract Sum, (Less Fluctuations) to be paid in foreign currency.

Currency in which foreign exchange element is required:

……

Date: The …… Day of …….. 20…….

Enter 0% (zero percent) if no payment will be made in foreign currency.

Maximum foreign currency requirement shall be _____(percent) of the Contract Sum, less Fluctuations.

_____

(Signature of Tenderer)

LETTER OF NOTIFICATION OF AWARD

To:_____

_____

_____

RE: Tender No._____

Tender Name_____

This is to notify that the contract/s stated below under the above mentioned tender have been awarded to you.

_____

_____

1. Please acknowledge receipt of this Letter of Notification signifying your Acceptance.

2. The Contract/contracts shall be signed by the parties within 30 days of the date of this letter but not earlier than 14 days from the date of the letter.

3. You may contact the officer whose particulars appear below on the subject matter of this Letter of Notification of Award.

…….
The Chief Executive Officer
Kenya Medical Supplies Authority
P. O. Box 47715 – 00100
NAIROBI.

FOR: **…….**

LETTER OF ACCEPTANCE

[letterhead paper of the Employer]

_____*[date]*

TO: _____(Contractor)

P. O. BOX: _____

_____

Dear Sir,

This is to notify you that your Tender dated _____

for the execution of _____

[Name of the Contract and identification number, as given in the Tender documents] for the Contract Price of Kshs._____ *[amount in figures]* [Kenya Shillings _____
_____*(amount in words)*
in accordance with the Instructions to Tenderers is hereby accepted.

You are hereby instructed to proceed with the execution of the said Works in accordance with the Contract documents.

Authorized Signature: ……

Name and Title of Signatory: ……

FORM OF AGREEMENT

THIS AGREEMENT, made the _____ day of _____ 20 _____ between

KENYA MEDICAL SUPPLIES AUTHORITY of [or whose registered

office is situated at] **……...** (hereinafter called "the Procurement Entity") of the one part AND

_____of[or whose registered

office is situated at]_____

(hereinafter called "the Contractor") of the other part.

WHEREAS THE Procurement Entity is desirous that the Contractor executes

_____

(name and identification number of Contract) (hereinafter called "the Works") located

at_____*[Place/location of the Works*]and the Procurement Entity has

accepted the tender submitted by the Contractor for the execution and completion of such Works

and the remedying of any defects therein for the Contract Price of

Kenya Shillings_____*Amount in figures*],

Kenya Shillings_____ [*Amount in words]*.

NOW THIS AGREEMENT WITNESSETH as follows:

1. In this Agreement, words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.

2. The following documents shall be deemed to form and shall be read and construed as part of this Agreement i.e.
   (i) Letter of Acceptance
   (ii) Form of Tender
   (iii) Conditions of Contract Part I
   (iv) Conditions of Contract Part II and Appendix to Conditions of Contract

(v) Specifications

(vi) Drawings

(vii) Priced Bills of Quantities

3. In consideration of the payments to be made by the Procurement Entity to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Procurement Entity to execute and complete the Works and remedy any defects therein in conformity in all respects with the provisions of the Contract.

4. The Procurement Entity hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties thereto have caused this Agreement to be executed the day and year first before written.

The common Seal of _____

Was hereunto affixed in the presence of _____

Signed Sealed, and Delivered by the said _____

Binding Signature of the Procurement Entity

_____

Binding Signature of Contractor _____

In the presence of (i) Name_____

Address_____

Signature_____

(ii) Name _____

Address_____

Signature_____

CONTRACT FORM

THIS AGREEMENT made the ___day of _____20____between…… [name of Procuring Entity] of …….[country of Procuring Entity] (hereinafter called "the Procuring entity") of the one part and ……[name of tenderer] of …….[city and country of tenderer] (hereinafter called "the tenderer") of the other part.

WHEREAS the procuring entity invited tenders for certain materials and spares. viz……..[brief description of materials and spares] and has accepted a tender by the tenderer for the supply of those materials and spares in the spares in the sum of ……[contract price in words and figures].

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.

2. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz.:

   (a) the Tender Form and the Price Schedule submitted by the tenderer;

   (b) the Schedule of Requirements;

   (c) the Technical Specifications;

   (d) the General Conditions of Contract;

   (e) the Special Conditions of Contract; and

   (f) the Procuring entity's Notification of Award.

3. In consideration of the payments to be made by the Procuring entity to the tenderer as hereinafter mentioned, the tenderer hereby covenants with the Procuring entity to provide the materials and spares and to remedy defects therein in conformity in all respects with the provisions of the Contract

4. The Procuring entity hereby covenants to pay the tenderer in consideration of the provision of the materials and spares and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the contract at the times and in the manner prescribed by the contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with their respective laws the day and year first above written.

Signed, sealed, delivered by _____the _____(for the Procuring entity)

Signed, sealed, delivered by _____the _____(for the tenderer)

in the presence of_____

FORM RB 1

REPUBLIC OF KENYA

PUBLIC PROCUREMENT ADMINISTRATIVE REVIEW BOARD

APPLICATION NO…….OF…….….20……...

BETWEEN

…….APPLICANT

AND

……RESPONDENT *(Procuring Entity*)

Request for review of the decision of the…… (*Name of the Procuring Entity)* of ……dated the…day of ……..20…….in the matter of Tender No……..…of ……..20……

REQUEST FOR REVIEW

I/We……,the above named Applicant(s), of address: Physical address…….Fax No……Tel. No……..Email ……., hereby request the Public Procurement Administrative Review Board to review the whole/part of the above mentioned decision on the following grounds , namely:-

By this memorandum, the Applicant requests the Board for order/orders that: -

1.

2.

etc

SIGNED …….(Applicant)

Dated on…….day of ……/…20…..

FOR OFFICIAL USE ONLY

Lodged with the Secretary Public Procurement Administrative Review Board on …… day of ……....20….……

SIGNED
Board Secretary

SECTION B

CONDITIONS OF

SUB-CONTRACT AGREEMENT

CONDITIONS OF CONTRACT

SUB-CONTRACT AGREEMENT (KABCEC)

AGREEMENT AND CONDITIONS OF SUB-CONTRACT FOR BUILDING WORKS

Published by:
The Kenya Association of Building and Civil Engineering Contractors
with the sanction of:
The Joint Building Council, Kenya
and
The Architectural Association of Kenya

June 2002 Edition

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ORIGINAL
embossed stamp

COUNTERPART
embossed stamp

1.0 AGREEMENT

1.1 This agreement is made on ……

between ……..

of (or whose registered office is situated at) ……

……

(hereinafter called "the Contractor") of the one part ……

and ……..

of (or whole registered office is situated at) ……

……...
(hereinafter called "the Sub-Contractor") of the other part:

1.2 SUPPLEMENTAL to an agreement(hereinafter referred to as the "the main contract")

made on ……..

Between ……

……
(hereinafter called "the Employer") of the one part and the Contractor of the other part based on the Agreement and Conditions of Contract for Building Works, published by the Joint Building Council, Kenya ……..
…….. edition.

1.3 WHEREAS the contractor is desirous of sub-letting to the Sub-Contractor

……..

……

……

hereinafter called "the sub-contractor works" at……...

on Land Reference No……...being part of the main contract works.

1.4 And whereas the Sub-contractor has supplied the Contractor with a priced copy of the bills of quantities (hereinafter referred to as "the sub-contractor bills"), where applicable, which together with the drawings numbered……

……...
(hereinafter referred to as "the sub-contract drawings), the specifications and the conditions of sub-contract have been signed by or on behalf of the parties thereto.

And whereas the Sub-Contractor has had reasonable opportunity of inspecting the main contract or a copy thereof except the detailed prices of the Contractor included in the bills of quantities or schedule of rates.

1.5 And whereas the Architect, with the approval of the Employer, has nominated the Sub-Contractor to carry out the works described at clause 1.3 herein:

NOW IT IS HEREBY AGREED AS FOLLOWS:

1.6 For the consideration herein stated, the Sub-Contractor shall upon and subject to the conditions annexed hereto carry out and complete the sub-contract works shown upon the sub-contract drawings and described by or referred to in the sub-contract bills, specifications and in the said conditions.

1.7 The Contractor shall pay the Sub-Contractor the sum of the Kshs (in words)……

……

……Kshs……..……)
(hereinafter referred to as "the sub-contractor price") or such sum as shall become payable hereinafter at the times and in manner specified in the said conditions.

1.8 The term 'Architect', 'Quantity Surveyor' and 'Engineer', where applicable, shall refer to the persons appointed by the Employer to administer the sub-contract in accordance with the main contract agreement. Where applicable reference to the Project Manager shall be deemed to include reference to the Engineer.

1.9 In the event of the need to appoint a replacement Architect, Quantity Surveyor, Engineer or other specialist (whether named in this agreement or not) the Employer shall make such appointment as soon as practicable after the need for such appointment arises and shall communicate the appointment to the Sub-Contract through the Contractor.

1.10 Where the sub-contract does not incorporate bills of quantities, the term "sub-contract bills" and "bills of quantities" wherever appearing shall be deemed deleted and replaced with the term "schedule of rates" as applicable.

1.11 The terms defined in the main contract shall have the same meaning in this sub-contract as that assigned to them therein.

1.12 AS WITNESS the hands of the said parties;

Signed by the said

……..(Contractor)

In the presence of

Name ……..

Address ……..

Signed by the said

…….(Sub-Contractor)

In the presence of

Name ……

Address ……

CONDITIONS OF SUB-CONTRACT

2.0 GENERAL OBLIGATIONS OF THE CONTRACTOR

The Contractor shall:

2.1 Timeously obtain from the Project Manager on behalf of the Sub-Contractor all drawings, necessary details, instructions and other information required by the Sub-Contractor for the proper carrying out of the sub-contract works.

2.2 Provide all such facilities and attend upon the Sub-Contractor as required and as provided in the specifications, bills of quantities and these conditions to the extent compatible with the provisions of the main contract

2.3 Observe, perform and comply with all the provisions of the main contract and of this sub-contract on the part of the Contractor to be observed, performed and complied with to ensure satisfactory completion of the sub-contract works.

3.0 GENERAL OBLIGATIONS OF THE SUB-CONTRACTOR

3.1 The Sub-Contractor shall be deemed to have notice of all the provisions of the main contract except the detailed prices of the Contractor included in the bills of quantities or in the schedule of rates.

3.2 The Sub-Contractor shall carry out and complete the sub-contract works in accordance with this sub-contract and in all respects to the reasonable satisfaction of the Contractor and of the Project Manager and in conformity with all reasonable directions and requirements of the Contractor regulating the due carrying out of the contract works.

3.3 The Sub-Contractor shall observe, perform and comply with all the provisions of the main contract on the part of the Sub-Contractor to be observed, performed and complied with so far as they relate and apply to the sub-contract works or any portion thereof and are not inconsistent with the expressions of this sub-contract as if all the same were set out herein.

3.4 Without prejudice to the generality of the foregoing requirements, the Sub-Contractor shall especially observe perform and comply with the provisions in the main contract as they apply to the sub-contract works

4.0 SUB-CONTRACT DOCUMENTS

4.1 The sub-contract documents for use in the carrying out of the sub-contract works shall be:-

4.1.1 The agreement and these conditions

4.1.2 The sub-contract drawings as listed in the agreement

4.1.3 The sub-contract bill of quantities or schedule of rates as applicable

4.1.4 The specifications as separately supplied or as contained in the sub-contract bills.

4.2 Upon the execution of the sub-contract, the Contractor shall register the agreement with the relevant statutory authority and pay all fees, charges, taxes, duties and all costs arising therefrom.

4.3 The manner of supplying contract documents, their custody, display on site and their interpretation in the event of discrepancies shall be as provided in the main contract in respect of the main contract documents with the necessary amendments made to refer to the sub-contract.

5.0 GENERAL LIABILITY OF THE SUB-CONTRACTOR

5.1 The Sub-Contractor shall be liable for and shall indemnify the Contractor against and from:

5.1.1 Any breach, non-observance or non-performance by the Sub-Contractor, his servants or agents of any of the said provisions of the main contract and of this sub-contract.

5.1.2 Any act or omission of the Sub-Contractor, his servants or agents which involve the Contractor in any liability to the Employer under the main contract

5.1.3 Any claim, damage, loss or expense due to or resulting from any negligence or breach of duty on the part of the Sub-Contractor, his servants or agents.

5.1.4 Any loss or damage resulting from any claim under any statute or common law by an employee of the Sub-Contractor in respect of personal injury or death arising out of or in the course of his employment.

5.2 Provided that nothing contained in this sub-contract shall impose any liability on the Sub-Contractor in respect of any negligence or breach of duty on the part of the Employer, the Contractor, other sub-contractors or their respective servants or agents nor create any privity of contract between the Sub-Contractor and the Employer or any other sub-contractor.

6.0 INSURANCE AGAINST INJURY TO PERSONS AND PROPERTY

6.1 Without prejudice to his liability to indemnify the Contractor under clause 5.0 above, the Sub-Contractor shall maintain:-

6.1.1 Such insurances as are necessary to cover the liability of the Sub-Contractor in respect of injury or damage to property including damage to the works arising out of or in the course of or by reason of the carrying out of the sub-contract works except for liability against the contingencies specified at clause 6.3 herein.

6.1.2 The insurances required under sub clause 6.1.1 above shall be placed with insurers approved by the Contractor and the Architect.

6.2 Notwithstanding the provisions of clause 23.0 of these conditions, the Contractor shall not be obliged to make payments to the Sub-Contractor before the said policies have been provided.

6.3 Where clause 30 of the main contract applies, the sub-contract works, including materials and goods of the sub-Contractor delivered to the works, shall as regards loss or damage by the contingencies stated at clause 30 therein, namely, fire, earthquake, fire following earthquake, lightning, explosion, storm, tempest, flood, bursting or overflowing of water tanks, apparatus or pipes, aircraft and other aerial devices or articles dropped therefrom, riot and civil commotion, be at the sole risk of the contractor. The Contractor shall cover his liability for the works by procuring insurances as required in the said clause.

6.4 Where clause 30 or the main contract applies, the sub-contract works, including materials and goods of the Sub-Contractor delivered to the works shall, as regards loss or damage by the contingencies stated therein be at the sole risk of the Employer. The Employer shall cover his liability for the works by procuring insurances as required in the said clause.

6.5 The Sub-Contractor shall observe and comply with the conditions contained in the policy or policies of insurance of the Contractor or of the Employer, as the case may be, as regards loss or damage which may be caused by the stated contingencies. For this purpose, the Contractor or the Employer as the case may be, shall avail the said policies to the Sub-Contractor for his perusal.

6.6 If any loss or damage affecting the sub-contract works or any part thereof or any unfixed goods or materials is occasioned by any one or more of the said contingencies, then,

6.6.1 The occurrence of such loss or damage shall be disregarded in computing any amounts payable to the Sub-Contractor under the sub-contract, and

6.6.2 The Sub-Contractor shall, with due diligence, restore the work damaged, replace or repair any unfixed materials or goods which have been destroyed or damaged, remove and dispose of any debris and proceed with the carrying out and completion of the sub-contract works.

6.6.3 The restoration of work damaged the replacement and repair of unfixed materials and goods and the removal of debris shall be deemed to be a variation required by the Architect. Such work shall be paid for in accordance with clause 30.0 of the main contract.

7.0 PERFORMANCE BOND

Before commencing the works, the Sub-Contractor shall provide one surety who must be an established bank or insurance company to the approval of the Contractor and who will be bound to the Contractor in the sum equivalent to five per cent (5%) of the sub-contract price for the due performance of the sub-contract until the certified date of practical completion. Notwithstanding the provisions of clause 23.0 of these conditions, no payments shall made to the Sub-Contractor before the said bond is provided.

8.0 POSSESSION OF SITE AND COMMENCEMENT OF WORKS

8.1 Within the period stated in the appendix to these conditions, the Contractor shall give possession of the site works to the Sub-Contractor and such access as may be necessary to enable the Sub-Contractor to commence and proceed with the sub-contract works in accordance with the sub-contract.

8.2 On or before the date for commencement of works stated in the appendix to these conditions, the Sub-Contractor shall commence the carrying out of the sub-contract works and shall proceed regularly and diligently with the same in accordance with the sub-contract program, the main contract program and or with the progress of the main contract works and complete on or before the date stated in the appendix to these conditions as the date for practical completion or within any extended time granted under clause 25.0 of these conditions.

9.0 PROJECT MANAGERS INSTRUCTIONS

9.1 The Sub-Contractor shall forthwith comply with all the instructions issued to him by the Project manager, either directly or through the Contractor, in regard to any matter in respect of which the Project Manager is expressly empowered by the main contract conditions to issue instructions.

9.2 The manner of complying with or querying the validity of Project manager's instruction shall be as provided in clause 16.0 of the main contract. The Project manager shall not be obliged to carry our instructions not issued in the manner provided therein.

10.0 VARIATIONS

10.1 The term "variation" shall have the meaning assigned to it at clause 22.0 of the main contract.

10.2 The valuation of variations shall be made by the Quantity Surveyor in accordance with sub-clause 22.0 of the main contract.

10.3 Effect shall be given to the measurement and valuation of variations in interim certificates and by the adjustment of the sub-contract price.

11.0 LIABILITY FOR OWN EQUIPMENT

The construction equipment and other property belonging to or provided by the Sub-Contractor and brought onto the site for carrying out the works shall be at the sole risk of the Sub-Contractor. Any loss or damage to the same or caused by the same shall, except for any loss or damage due to any negligence, omission or default of the Contractor, be at the sole risk of the Sub-Contractor who shall indemnify the Contractor against loss, damage or claims in respect thereof. Insurance against any such loss, damage or claims shall be the sole responsibility of the Sub-Contractor.

12.0 PROVISION OF FACILITIES BY THE CONTRACTOR

12.1 Where provided in the main contract, the Contractor shall supply at his own cost all necessary water, lighting, electric power, telephones and security required for the sub-contract works. Where not so provided, the Sub-Contractor shall provide the said services at his own cost.

12.2 Except as otherwise provided in the main contract, the Sub-Contractor shall construct at his own expense all necessary workshops, stores, offices, workers' accommodation and other temporary buildings required for the carrying out of the works at such places on site as the Contractor shall identify. The Contractor undertakes to give the sub-Contractor the required space and all reasonable facilities for such construction. Upon practical completion of the works, the Sub-contractor shall remove the said facilities and reinstate disturbed surface to the satisfaction of the Contractor.

12.3 The Contractor shall provide, without charge, general attendance to the Sub-Contractor to facilitate the carrying out of the works which attendance shall include facilities for access to and movement within the site and sections or parts of the building or buildings where the sub-contract works are being carried out, the use of temporary roads, paths and access ways, sanitary and welfare facilities.

12.4 The Contractor shall permit the Sub-Contractor to use, without charge, at all reasonable times, any scaffolding and hoisting equipment belonging to or provided by the Contractor while it remains so erected upon the site. The use by the Sub-Contractor of any other equipment, facilities or services provided by the Contractor for the works shall be subject to private arrangements between the parties hereto and shall not be regulated by these conditions.

12.5 Provided that such use of the scaffolding and hoisting equipment shall be on the express condition that no warranty or other liability on the part of the Contractor shall be created or implied in regard to fitness, condition or suitability for the intended purpose except that the Sub-Contractor shall be liable for any damage caused thereto or thereby.

12.6 Where required, the Contractor shall provide the facilities, equipment and the like and carry out any necessary builder' works within a reasonable time of the request by the Sub-Contractor to enable timely performance of the sub-contract.

13.0 LIABILITY FOR OWN WORK

13.1 The Contractor and the Sub-Contractor shall be liable for the due carrying out of their respective works in accordance with their respective contracts without causing damage or injury to the works of the other sub-contractors, and in particular:

13.2 Should the carrying out of the sub-contract works cause injury or damage to the main contract works, or to the work of the other sub-contractors, the Sub-contractor shall rectify the damage so caused at his own cost.

13.3 Should the carrying out of the main contract works cause damage or injury to the sub-contract works, the Contractor shall rectify the damage at his own cost.

13.4 If in the course of carrying out the sub-contract works, the Sub-Contractor is required to carry out work not included in his sub-contract by reason of any materials of workmanship not being in accordance with the main contract or with other sub-contracts, the Contractor shall reimburse the Sub-Contractor the expenses incurred therein.

14.0 CO-OPERATION IN USE OF FACILITIES

14.1 The Contractor and the Sub-Contractor undertake to co-operate with each other and co-ordinate work arrangements and procedures required in carrying preventing interference, disruption or disturbance to the progress of the works or to the activities of other sub-contractors.

14.2 The Contractor and the Sub-Contractor undertake not to wrongfully use or interfere with equipment, scaffolding, appliances, ways, temporary works, temporary buildings and other property belonging to or provided by the other part or by other sub-contractors.

14.3 Provided that nothing contained in this clause shall prejudice or limit the rights of the Contractor or of the sub-Contractor in carrying out their respective statutory and or contractual duties under this sub-contract or under the main contract.

15.0 ASSIGNMENT AND SUBLETTING

15.1 Neither the Contractor nor the Sub-Contractor shall, without the written consent of the other and the Employer, assign this sub-contract.

15.2 The Sub-Contractor shall not sub-let the whole of the works without the written consent of the Contractor and the Project manager.

15.3 Provided that any assignment and any sub-contracts as well as this sub-contract shall terminate immediately upon (for whatever reason) of the main contract.

16.0 WORK PRIOR TO APPOINTMENT OF CONTRACTOR

16.1 Where the Sub-Contractor is appointed before the Contractor is appointed, any work done by the Sub-Contractor prior to the said appointment shall be treated as a separate contract between the Employer and the Sub-Contractor and shall be valued by the Quantity Surveyor and paid for directly by the Employer without the involvement of the Contractor.

16.2 Where the Sub-Contractor is appointed before the Contractor is appointed, the Sub-Contractor shall be permitted, when the identity of the Contractor is known and within 30 days thereof, to raise objections (on reasonable grounds) against entering into a sub-contract with the Contractor

16.3 Where work which is outside the sub-contract is ordered directly by Employer or the Architect, that work shall be treated as a separate contract between the Sub-Contractor and the Employer and shall be valued and paid for directly to the Sub-Contractor in accordance with sub-clause 16.1 herein without the involvement of the Contractor. The cost of equipment, facilities and the like provided by the Contractor to the Sub-contractor and any builder's work carried out by the Contractor with regard to such work shall be paid directly by the Sub-Contractor to the Contractor.

17.0 SUB-CONTRACTOR DESIGN

Where the sub-contract includes a design component by the Sub-Contractor, the design shall be to the approval of the Project Manager and the Employer. Notwithstanding and approvals, the Sub-Contractor shall be liable directly to the Employer for any consequences of failure of the design to comply with the requirements of the Employer or to be fit or suitable for the purposes for which the sub-contract works or the relevant part thereof were intended.

18.0 SPECIFICATION OF GOODS, MATERIALS AND WORKMANSHIP

18.1 All materials, goods and workmanship shall so far as procurable, be of the respective kinds and standards described in the sub-contract bills, specifications and drawings.

18.2 The provisions in the main contract regulating the procurement, specification and quality assurance of materials, processes and workmanship and the requirements of clause dealing with the provision of samples and the carrying out of specified tests shall apply to the sub-contract in the same manner as they apply to the main contract.

19.0 COMPLIANCE WITH STATUTORY AND OTHER REGULATIONS

The Sub-Contract shall comply with all statutory and other regulations of competent authorities regulating the carrying out of the works in accordance with the provisions in the main contract, as applicable.

20.0 ROYALTIES AND PATENT RIGHTS

20.1 All royalties or other sums payable in respect of the supply and use of any patented articles, processes or inventions in carrying out the works as described by or referred to in the sub-contract bills, specifications or drawings shall be deemed to have been included in the sub-contract price.

20.2 The provision of clause in of the main contract dealing with the same shall apply to the sub-contract in the same manner as they apply to the main contract.

21.0 ANTIQUITIES AND OTHER OBJECTS OF VALUE

All fossils, antiquities and other objects of interest or value which may be found on the site or in excavating the same during the progress of the sub-contract shall be dealt with in accordance with the provisions of the main contract.

22.0 SUSPENSION OF WORKS

22.1 An instruction by the Project Manager to postpone or suspend the works under clause 28.0 of the main contract shall have the same effect on the sub-contract works as it has on the main contract works.

22.2 If the suspension arises due to default by the contractor and the sub-contract works are adversely effected by the suspension, the sub-contractor shall be entitled to reimbursement by the contractor of all expenses arising therefrom.

22.3 If the suspension arises due to default by the sub-contractor, the sub-contractor shall be liable to the contractor for all expenses arising therefrom.

22.4 A notice by the contractor to suspend the works under clause 29.0 of the main contract shall have the same effect on the sub-contract works as it has on the main contract works.

22.5 Should the sub-contract works be adversely affected by suspension under clause in the main contract, the sub-contractor shall be entitled to the remedies provided for at clauses 25.0 and 26.0 of this sub-contract.

23.0 PAYMENTS

23.1 Procedures for originating and processing applications for payments and payment certificates as regards the sub-contract works shall be the same as those prescribed for the Contractor in the main contract at clause 34.0. references therein to the contractor shall be deemed to include references to the Sub-contractor.

23.2 Before submitting an application for payment to the Quantity Surveyor in accordance with clause 34.1 of the main contract, the Contractor shall give the Sub-Contractor a notice of not less than 7 days to submit the details of the amounts, which the Sub-Contractor considers himself entitled to for the relevant period. Such details, when received, shall be annexed to the said Contractor's application.

23.3 Where it is necessary to measure the sub-contract works for purpose of interim valuation or for the preparation of the final account, the Quantity Surveyor shall give the Sub-Contractor a reasonable opportunity to be present at the time of the measurements and to take notes and measurements as he may require.

23.4 Neither the Quantity Surveyor nor the Project Manager shall be bound to issue a valuation or a payment certificate in respect of the sub-contract works, as the case may be, whose value is less than the amount stated in the appendix to these conditions as the minimum amount of a payment certificate before the issue of the certificate of practical completion of the main contract or of the sub-contract, as applicable.

23.5 Provided that where the minimum amount of a certificate inserted in the appendix to these conditions has been achieved but the corresponding minimum inserted in the appendix to the main contract in respect of the Contractor's work has not been achieved, or the Contractor has not applied for payment within the stated period, the Project Manager may with the consent of the Contractor, issue a payment certificate directly to the Sub-Contractor for payment by the Employer.

23.6 Within 7 days of receipt by the Contractor of payment by the Employer, the Contractor shall notify and pay to the Sub-Contractor the total value certified therein in respect of the sub-contract works less the portion of the retention money attributable to the sub-contract works and less amounts previously paid to the Sub-Contractor.

23.7 Where certificates are not paid by the Employer within the prescribed period, the Sub-Contractor shall be entitled to be paid by the Contractor, upon receipt of payment from the Employer, the interest certified for the delay in accordance with sub-clause 34.6 of the main contract in respect of the portion of the sub-contract works included in the certificate.

23.8 a) Payment will be made through certificates direct to the subcontractor. All the subcontractors valuations claim must done through the main contractor and subsequently forwarded to the consultants . All payments will be less retention as specified in the Main Contract. No payment will become due until materials are delivered to site.

b) In case, the Contractor has received payment from the Employer but has not released the appropriate amount to the Sub-Contractor within the stated period, the Contractor shall pay to the Sub-Contractor in addition to the amount not paid, simple interest on the unpaid amount for the period it remains unpaid at the commercial bank lending rate in force during the period of default.

23.9 If, upon application by the Sub-Contractor and Project Manager agree, or if the Contractor fails to make payment to the Sub-Contractor in accordance with sub-clause 23.6 herein and continues such default for 14 days thereafter, the Project Manager may issue a payment certificate directly to the Sub-Contractor for payment by the Employer, where applicable, and deduct the amount from subsequent payment to the Contractor.

23.10 Upon the issue of the certificate of practical completion and the release of one half of the total amount of the retention of money to the Contractor, the Contractor shall pay the portion attributable to the sub-contract to the Sub-Contractor within 7 days of receipt of the payment.

23.11 Upon the issue of the certificate of rectification of defects and receipt of the balance of the retention money by the Contractor, the Contractor shall pay the balance of the portion of the retention money attributable to the sub-contract to the Sub-Contractor within 7 days of receipt of the payment.

23.12 The sub-contract final account shall be agreed between the Sub-Contractor, the Contractor, the Quantity Surveyor and the Project Manager and shall be annexed to the Contractor's final accounts which shall be agreed as provided for in the main contract. For purpose of finalizing the accounts, the Quantity Surveyor may request the Sub-Contractor to submit further documents as he may deem necessary.

23.13 The final certificate issued under sub-clause 34.21 of the main contract shall be final and binding on the Sub-Contractor in the same manner it is binding on the Contractor.

23.14 If the Project Manager desires to secure final payment to the Sub-Contractor before final payment is due to the Contractor, the provisions of sub-clause 32.1 of the main contract shall apply.

23.15 The Contractor shall be entitled to deduct from or set off against any money due from him to the Sub-Contractor in interim certificates any sum or sums which the Sub-Contractor is liable to pay to the Contractor arising under or in connection with the sub-contract.

24.0 PRACTICAL COMPLETION AND DEFECTS LIABILITY

24.1 The Sub-Contractor shall proceed with the works regularly and diligently and complete the same within the period stated in the appendix to this sub-contract or within such extended period as may be granted under clause 25.0 of this sub-contract.

24.2 Where the sub-contract works are to be completed in sections or where the sub-contract works are to be completed in advance of the main contract works, the provisions of clauses in the main contract shall apply, as appropriate, to the sub-contractor in the same manner as they apply to the main contract.

24.3 The procedures for certifying practical completion and for dealing with defects in the sub-contract works as well as the main contract works are as prescribed in the main contract. Upon the issue of the certificate of practical completion of the whole of the works or of the sub-contract works, as applicable, the Sub-contractor shall be entitled to release of one half of the retention money attributable to the sub-contract works within 7 days after the Contractor has received payment.

24.4 The balance of the retention money shall be released to the Sub-Contractor after the defects appearing in the works have been rectified in accordance with the main contract condition of contract and after the Contractor has received the said payment as provided for in the main contract.

25.0 EXTENSION OF TIME

25.1 Upon it becoming reasonably apparent that the progress of the sub-contract works is or will be delayed, the Sub-Contractor shall forthwith give written notice of the cause of the delay to the Contractor and to the Project Manager with supporting details showing the extent of delay caused or likely to be caused. Thereafter, the Project Manager shall evaluate the information supplied by the Sub-Contractor and if in his opinion, the completion of the works is likely to be or has been delayed beyond the date for practical

completion stated in the appendix to these conditions or beyond any extended time previously fixed under this clause, by any of the reasons entitling the Contractor to extension of time under sub-clause 36.1 of the main contract, then the Project Manager shall, so soon as he is able estimate the length of the delay beyond the date or time aforesaid, recommend to the Contractor a fair and reasonable extension of time to be granted for the completion of the sub-contract works.

25.2 Thereupon, the Contractor shall grant in writing to the Sub-Contractor the recommended time. Provided that the Contractor shall not grant any extension of time to the Sub-Contractor without the written recommendation of the Project Manager. And provided that the Sub-Contractor shall constantly use his best endeavors to prevent delay and shall do all that may be reasonably required to proceed with the works.

25.3 The procedures for dealing with requests for extension of time and the observance of time limits prescribed in the main contract shall apply to the sub-contract in the same manner as they apply to the main contract.

26.0 LOSS AND EXPENSE CAUSED BY DISTURBANCE OF REGULAR PROGRESS

26.1 If upon written application being made by the Sub-Contractor to the Contractor and to the Project Manager, the project manager is of the opinion that the Sub-Contractor has been involved in direct loss and or expense, for which he would not be reimbursed by a payment made under any other provision in this sub-contract, by reasons of the regular progress of the sub-contract works or any part thereof having been materially affected by any of the reasons which would entitle the Contractor to reimbursement under the main contract, the Quantity Surveyor shall assess the amount of such loss and or expense.

26.2 Any amount so assessed shall be added to the sub-contract price and if an interim certificate is issued after the date of assessment, any such amount shall be added to the amount, which would otherwise be stated as due in such certificate as regards the Sub-Contractor's entitlement.

26.3 The procedures for dealing with loss and or expense claims prescribed in the main contract shall apply to the sub-contract in the same manner as they apply to the main contract, as appropriate.

27.0 DAMAGES FOR DELAY IN COMPLETION

27.1 If the Sub-Contractor fails to complete the sub-contract works by the date for practical completion stated in the appendix to these conditions or within any extended time fixed under clause 25.0 herein, and the Engineer certifies in writing that in his opinion the same ought reasonably so to have been completed, then the Sub-Contractor shall pay or allow to the Contractor a sum calculated at the rate stated in the said appendix as liquidated damages for the period during which the works shall so remain or have remained incomplete.

27.2 The Contractor may deduct such sum from any money due or to become due to the Sub-Contractor under the sub-contract or recover the same from the Sub-Contractor as a debt. Provided that the Contractor shall not be entitled to recover any liquidated damages from the Sub-Contractor without first obtaining the Architect's certificate of delay prescribed herein.

28.0 FLUCTATIONS

28.1 Unless otherwise stated in the sub-contract bills or specifications, the sub-contract price shall be deemed to have been calculated to include all duties and taxes imposed by statutory and other competent authorities in the country where the works are being carried out, and

28.2 The sub-contract price shall be deemed to be based on currency exchange rates current at the date of tender as regards materials or goods to be specifically imported for permanent incorporation in the works.

28.3 Should duties, taxes and exchange rates vary during the period of the contract, compensation thereof shall be calculated in accordance with sub-clause 24.5 of the main contract.

28.4 Compensation for change in prices of goods and materials incorporated in the works and in the rates of wages provided for in the main contract shall not apply to the sub-contract unless specifically provided for in the bill of quantities or specifications.

29.0 TERMINATION OF MAIN CONTRACT

29.1 If, for any reason, the contractor's employment is terminated either under clause 33.0 of the main contract, this sub-contract shall thereupon also terminate.

29.2 Upon termination, the sub-contractor shall ceases all work and vacate the site. He shall not remove any equipment or any materials brought onto the site for the carrying out of the works without the written approval of the contractor and the project manager

29.3 Where the termination of the main contract occurs without the default of the sub-contractor, the sub-contractor shall be paid by the contractor for work done in the like manner as the Contractor is paid at clause 33.0 of the main contract.

29.4 Where the termination of main contract arises from the default by the sub-contractor, the adjustment of the sub-contract accounts shall be performed in the like manner as is provided at sub-clause 33.0 of the main contract regarding the main contract accounts.

30.0 TRMINATION OF SUB-CONTRACT.

30.1 Without prejudice to any other rights and remedies which the contractor may possess, if the sub-contractor shall make default in any one or more of the respects which would entitle the employer to terminate the main contract under clause 38.0 therein, the contractor shall give the sub-contractor a notice, with a copy to the Project Manager and to the employer by registered post of recorded delivery specifying the default. Should the sub-contractor continue the default for 14 days after receipt of such notice or at any time thereafter repeat such default and should the Project Manager certify that the sub-contractor is in default, the contractor may terminate the Sub-contract forthwith after the expiry of the notice provided that the notice is not given unreasonably or vexatiously. The termination letter shall be copied to the Project Manager and to the Employer.

30.2 Where the sub-contract is terminated due to the default of the sub-contractor as in sub-clause 30.1 herein, the adjustment of sub-contract accounts shall be performed in the like manner as is provided at sub-clause 33.0 of the main contract regarding the main contract accounts.

30.3 Without prejudice to any other rights and remedies which the Sub-Contractor may possess, if the Contractor shall make default in one or more of the respects which, if committed by the Employer, would entitle the contractor to terminate the main contract under clause 39.0 therein, the Sub-Contractor shall give the Contractor a notice, with a copy to the Project Manager and to the Employer, by registered post or recorded delivery specifying the default. Should the contractor continue the default for 14 days after receipt of such notice or at any time thereafter repeat such default, and should the Project Manager certify that the contractor is in default, the Sub-Contractor may terminate the sub-contract forthwith after expiry of the notice, provided that the notice is not given unreasonably or vexatiously. The termination letter shall be copied to the Project Manager and to the Employer.

30.4 If the Sub-Contract is terminated due to the default of the Contractor as in sub- clause 30.3 herein, the Contractor shall pay the sub-contractor for work done in the like manner

as the Contractor would be paid at sub-clause 33 of the main contract where the termination is done by the Contractor.

30.5 Where the sub-contract is terminated due to the default of the Contractor, all expenses arising from the termination shall be done wholly by the Contractor and the termination shall not create any liability on the Employer.

30.6 Where the sub-contract is terminated due to the default of the Sub-Contractor, the sub-contractor shall be liable to the contractor for all expenses arising therefrom.

31.0 SETTLEMENT OF DISPUTES

31.1 In case any dispute or difference shall arise between the Contractor and Sub-Contractor, either during the progress or after the completion or abandonment of the sub-contract works, such dispute shall be notified in writing by either party to the other with a request to submit it to arbitration and to concur in the appointment of an Arbitrator within 30 days of the notice.

31.2 The dispute shall be referred to the arbitration and final decision of a person to be agreed by the parties. Failing agreement to concur in the appointment of an Arbitrator, the Arbitrator shall be appointment by the Chairman or Vice Chairman of the Architectural Association of Kenya or the Chairman or Vice Chairman of The Chartered Institute of Arbitrators, Kenya Branch, at the request of the applying party.

31.3 The arbitration may be on the construction of this sub-contract or on any matter or thing of whatsoever nature arising thereunder or in connection therewith including the rights and liabilities of the parties during the currency of the sub-contract and subsequent to the termination of the sub-contract.

31.4 Where the sub-contractor is aggrieved by the manner in which the Project Manager has exercised or failed to exercise his powers stipulated in the main contract, or in the sub-contact or by any action or inaction of the Employer, and in particular, if he is aggrieved by:

31.4.1 The failure or refusal of the Project Manager to recommend to the contractor an extension of sub-contract time, or

31.4.2 The extend of the recommended time,
or
31.4.3. The amount certified to the sub-contractor either in an interim in a final Certificate,
or
31.4.4 The issue of an instruction which the sub-contractor contends is not authorized by the main contract or the sub-contract,
or
31.4.5. Any other matter left to the discretion of the Project Manager in the main contract or in the sub-contract, then.

31.5 Subject to the Sub-Contractor giving the Contractor such indemnity and security as the Contractor may reasonably require, the Contractor shall allow the Sub-Contractor to use the contractor's name and, if necessary, shall join the Sub-Contractor in arbitration proceeding against the employer to decide the matters in dispute or in difference.

31.6 Provided that no arbitration proceedings shall be commenced on any dispute or difference where notice of a dispute or difference where notice of a dispute or difference has not been given by the applying party within 90 days of the occurrence or discovery of the matter or issue giving rise to the dispute or difference.

31.7 Notwithstanding the issue of a notice as stated above, the arbitration of such a dispute or difference shall not commence unless an attempt has in the first instance been made by the parties to settle such dispute or difference amicably with or without the assistance of third parties.

31.8 In any event, no arbitration shall commence earlier than 90 days after the service of the notice of a dispute or difference, except as provided for at sub-clause 31.9 herein.

31.9 Notwithstanding anything stated herein, the following matters may be referred to arbitration before the practical completion of the works or abandonment of the works or termination of the sub-contract without having to comply with sub clause 31.8 herein.

31.9.1 Whether or not the issue of an instruction by the Project Manager is authorized by the main contract or these conditions, and

31.9.2 Whether or not a payment certificate has been improperly withheld or is not in accordance with the main contract or these conditions or though issued, it has not been honoured.

31.10 All other matters in dispute shall only be referred to arbitration after the practical completion or alleged practical completion of the works or abandonment of the works or termination or alleged termination of the sub-contract, unless the project manager the contractor and the sub-contractor agree otherwise in writing.

31.11 The Arbitrator shall, without prejudice to the generality of his powers, have power to direct such measurements, computations, tests, or valuations as may in his opinion be desirable in order to determine the rights of the parties and assess and award any sums which ought to have been the subject or included in any payment certificate.

31.12 The Arbitrator shall, without prejudice to the generality of his powers, have power to open up, review and revise any certificate, opinion, decision, requirement or notice and to determine all matters in dispute which shall be submitted to him in the same manner as if no such certificate, opinion decision, requirement or notice had been given.

31.13 Provided that any decision of the Project Manager which is final and binding on the contractor under the main contract shall be final and binding between the contractor and the sub-contractor.

31.14 The award of such Arbitrator shall be final and binding upon the parties.

SUB CONTRACTOR'S PERFORMANCE BOND

BY THIS AGREEMENT we .....(SURETY)

of .....

are bound to .....(CONTRACTOR)

in the sum of Kenya shillings .....

.....(Kshs. .....)

to be paid by us to the said .....(CONTRACTOR)

WHEREAS by an agreement in writing dated .....

.....(SUB-CONTRACTOR)

entered into a sub-contract with .....(CONTRACTOR)

to carry out and complete the works therein stated in the manner and by the time therein specified all in accordance with the provisions of the said sub-contract, namely:
(description of works)
.....

NOW the condition of the above written bond is such that if the said sub-contractor, his executors, administrator, successors or assigns shall duly perform his obligations under the sub-contract, of if on default by the sub-contractor the surety shall satisfy and discharge the damages sustained by the contractor thereby up to the amount of the above written bond, then this obligation shall be void, otherwise it shall remain in full force and effect. Upon default, and without prejudice to his other rights under the sub-contract, the contractor shall be entitled to demand forfeiture of the bond and we undertake to honour the demand in the amount stated above.

PROVIDED always and it is hereby agreed and declared that no alteration in the terms of the said sub-contract or in the extend or nature of the works to be carried out and no extension of time by the contractor under the sub-contract shall in any way release the surety from any liability under the above written bond.

IN WITNESS whereof we have set out hand this..... day of .....

....

Surety Witness

Authrorised by Power of Attorney No.....

APPENDIX	**Clause**
Name of sub-contractor's insurers	6.0.....
Name of sub-contractor's surety	7.0.....
Amount of surety	7.0.....
Period of possession of site	8.1.....
Date of commencement of works	8.2.....
Date for practical completion	8.2.....
Interval for application of payment certificates	23.1.....
Minimum amount of payment certificate	23.4.....
Percentage of certified value retained	23.6.....
Limit of retention fund, if any	23.6.....
Name of the sub-contractor's bank for Purposes of interest calculation.	23.7, 23.8.....
Defects liability period	23.11.....
Period of final measurement and valuation	23.12.....
Damages of delay in completion	27.1 at the rate of Kshs. 100,000 /wk ..

Signed by the said:

....

CONTRACTOR **SUB-CONTRACTOR**

APPENDIX TO AGREEMENT AND CONDITIONS OF SUB-CONTRACT FOR BUILDING WORKS

Modify Clause 28.4

This is a fixed price contract.

SECTION C

SUB-CONTRACT PRELIMINARIES

AND

GENERAL CONDITIONS

CONTRACT PRELIMINARIES AND GENERAL CONDITIONS

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SECTION C

SUB-CONTRACT PRELIMINARIES AND GENERAL CONDITIONS

1.01 Examination of Tender Documents

The tenderer is required to check the number of pages of this document and should he find any missing or indistinct, he must inform the Engineer at once and have the same rectified.

All tenderers shall be deemed to have carefully examined the following:

a) Work detailed in the Specification and in the Contract Drawings.
b) The Republic of Kenya Document "General Conditions of Contract for Electrical and Mechanical Works".
c) Other documents to which reference is made.

He shall also be deemed to have included for any expenditure which may be incurred in conforming to the above items (a), (b), (c) and observe this expense as being attached to the contract placed for the whole or any part of the work.

The tenderer shall ensure that all ambiguities, doubts or obscure points of detail, are clarified with the Engineer before submission of his tender, as no claims for alleged deficiencies in the information given shall be considered after this date.

1.02 Discrepancies

The Sub-contractor shall include all work either shown on the Contract Drawings or detailed in the specification. No claim or extra cost shall be considered for works which has been shown on the drawings or in the specification alone.

Should the drawing and the specification appear to conflict, the Sub-contractor shall query the points at the time of tendering and satisfy himself that he has included for the work intended, as no claim for extra payment on this account shall be considered after the contract is awarded.

1.03 Conditions of Sub-Contract Agreement

The Sub-contractor shall be required to enter into a Sub-contract with the Main Contractor.

The Conditions of the Contract between the Main Contractor and the Sub-contractor as hereinafter defined shall be the latest edition of the Agreement and Schedule of Conditions of Kenya Association of Building and Civil Engineering Contractors as particularly modified and amended hereinafter.

For the purpose of this contract the Agreement and Schedule of Conditions and any such modifications and amendments shall read and construed together. In any event of discrepancy the modifications and amendments shall prevail.

1.04 Payment

Payment will be made through certificates direct to the subcontractor. All the subcontractors valuations claim must done through the main contractor and subsequently forwarded to the consultants . All payments will be less retention as specified in the Main Contract. No payment will become due until materials are delivered to site.

1.05 **Definition of Terms**

Throughout these contract documents units of measurements, terms and expressions are abbreviated and wherever used hereinafter and in all other documents they shall be interpreted as follows:

i. The term **"Employer"** shall mean **Kenya Medical Supplies Authority**

ii. The Term **"Project Manager "** Shall Mean **Works secretary, State Department of Public Works,**
Ministry of Transport, Infrastructure, Housing and Urban Development

iii. The term **"Architect: "** shall mean **Maestro Architects Ltd**

iv. The term **"Quantity Surveyor"** shall mean **M & M Construction Consultants.**

v. The term **"Civil/Structural Engineers "** shall mean **Kiri Consult Ltd**

vi. **Engineer:** The term **"Engineer"** shall mean **Norkun Intakes Ltd**

vii. **Main Contractor:** The term **"Main Contractor"** shall mean the firm or company appointed to carry out the Building Works and shall include his or their heir, executors, assigns, administrators, successors, and duly appointed representatives.

vii) **Sub-contractor:** The term **"Sub-contractor"** shall mean the persons or person, firm or Company whose tender for this work has been accepted, and who has entered into a contract agreement with the Contractor for the execution of the Sub-contract Works, and shall include his or their heirs, executors, administrators, assigns, successors and duly appointed representatives.

viii) **Sub-contract Works:** The term **"Sub-contract Works"** shall mean all or any portion of the work, materials and articles, whether the same are being manufactured or prepared, which are to be used in the execution of this Sub-contract and whether the same may be on site or not.

ix) **Contract Drawings:** The term **"Contract Drawings"** shall mean those drawings required or referred to herein and forming part of the Bills of Quantities.

x) **Working Drawings:** The term **"Working Drawings"** shall mean those drawings required to be prepared by the Sub-contractor as hereinafter described.

xi) **Record Drawings:** The term **"Record Drawings"** shall mean those drawings required to be prepared by the Sub-contractor showing "as installed" and other records for the Sub-contract Works.

xii) **Abbreviations:**

CM shall mean **Cubic Metre**

SM shall mean **Square Metre**

LM shall mean **Linear Metre**

M shall mean **Metre**

LS shall mean **Lump Sum**

mm shall mean **Millimetres**

No. shall mean **Number**

Kg. shall mean **Kilogramme**

KEBS shall mean **Kenya Bureau of Standards**

BS shall mean. **Current standard British Standard Specification published**

by the British Standard Institution, 2 Park Street, London W1, England

"Ditto" shall mean the whole of the preceding description in which it occurs.

Where it occurs in description of succeeding item it shall mean the same as in the first description of the series in which it occurs except as qualified in the description concerned.

Where it occurs in brackets it shall mean the whole of the preceding description which is contained within the appropriate brackets.

1.06 **Site Location**

The site of the Sub-contract Works is situated **at Embakasi Nairobi**

The tenderer is recommended to visit the site and shall be deemed to have satisfied himself with regard to access, possible conditions, the risk of injury or damage to property on/or adjacent to the site, and the conditions under which the sub-contract Works shall have to be carried out and no claims for extras will be considered on account of lack of knowledge in this respect.

1.07 **Duration of Sub-Contract**

The Sub-Contractor shall be required to phase his work in accordance with the Main contractor's program (or its revision). The program is to be agreed with the Main contractor.

1.08 **Scope of Sub-Contract Works**

The sub-contractor shall supply, deliver, unload, hoist, fix, test, commission and hand-over in satisfactory working order the complete installations specified hereinafter and/or as shown on the Contract Drawings attached hereto, including the provision of labour, transport and plant for unloading material and storage, and handling into position and fixing, also the supply of ladders, scaffolding the other mechanical devices to plant, installation, painting, testing, setting to work, the removal from site from time to time of all superfluous material and rubbish caused by the works.

The sub-contractor shall supply all accessories, whether of items or equipment supplied by the Main Contractor but to be fixed and commissioned under this Sub-contract.

1.09 **Extent of the Sub-contractor's Duties**

At the commencement of the works, the Sub-contractor shall investigate and report to the Engineer if all materials and equipment to be used in the work and not specified as supplied by the others are available locally. If these materials and equipment are not available locally, the Sub-contractor shall at this stage place orders for the materials in question and copy the orders to the Engineer. Failure to do so shall in no way relieve the Sub-contractor from supplying the specified materials and equipment in time.

Materials supplied by others for installation and/or connection by the Subcontractor shall be carefully examined in the presence of the supplier before installation and connection. Any defects noted shall immediately be reported to the Engineer.

The Sub-contractor shall be responsible for verifying all dimensions relative to his work by actual measurements taken on site.

The Sub-contractor shall mark accurately on one set of drawings and indicate all alterations and/or modifications carried out to the designed system during the construction period. This information must be made available on site for inspection by the Engineer.

1.10 **Execution of the Works**

The works shall be carried out strictly in accordance with:

a) All relevant Kenya Bureau of Standards Specifications.
b) All relevant British Standard Specifications and Codes of Practice (hereinafter referred to as B.S. and C.P. respectively).
c) This Specification.
d) The Contract Drawings.
e) The Bye-laws of the Local Authority.
f) The Architect's and/or Engineer's Instructions.

The Contract Drawings and Specifications to be read and construed together.

1.11 **Validity of Tender**

The tender shall remain valid for acceptance within 120 days from the final date of submission of the tender, and this has to be confirmed by signing the Tender Bond. The tenderer shall be exempted from this Bond if the tender was previously withdrawn in writing to the Employer before the official opening.

1.12 **Firm – Price Sub-contract**

Unless specifically stated in the documents or the invitation to tender, this is a firm-price Contract and the Sub-contractor must allow in his tender for the increase in the cost of labour and/or materials during the duration of the contract. No claims will be allowed for increased costs arising from the fluctuations in duties and/or day to day currency fluctuations. The Sub-contractor will be deemed to have allowed in his tender for any increase in the cost of materials which may arise as a result of currency fluctuation during the contract period.

1.13 **Variation**

No alteration to the Sub-contract Works shall be carried out until receipt by the Sub-contractor of written instructions from the Project Manager.

Any variation from the contract price in respect of any extra work, alteration or omission requested or sanctioned by the Project Manager or Engineer shall be agreed and confirmed in writing at the same time such variations are decided and shall not affect the validity of the Contract. Schedule of Unit Rates shall be used to assess the value of such variations. No allowance shall be made for loss of profit on omitted works.

Where the Project Manager requires additional work to be performed, the Sub-contractor, if he considers it necessary, will give notice within seven (7) days to the Main Contractor of the length of time he (the Sub-contractor) requires over and above that allotted for completion of the Sub-contract.

If the Sub-contractor fails to give such notice he will be deemed responsible for the claims arising from the delay occasioned by reason of such extension of time.

1.14 **Prime Cost and Provisional Sums**

A specialist Sub-contractor may be nominated by the Project Manager to supply and/or install any equipment covered by the Prime Cost or Provisional Sums contained within the Sub-contract documents.

The work covered by Prime Cost and Provisional Sums may or may not be carried out at the discretion of the Architect.

The whole or any part of these sums utilized by the Sub-contractor shall be deducted from the value of the Sub-contract price when calculating the final account.

1.15 **Bond**

The tenderer must submit with his tender the name of one Surety who must be an established Bank only who will be willing to be bound to the Main Contractor for an amount equal to 5 % of the Sub-contract amount as per the Main Contract condition of contract.

1.16 **Government Legislation and Regulations**

The Sub-contractor's attention is called to the provision of the Factory Act 1972 and subsequent amendments and revisions, and allowance must be made in his tender for compliance therewith, in so far as they are applicable.

The Sub-contractor must also make himself acquainted with current legislation and any Government regulations regarding the movement, housing, security and control of labour, labour camps, passes for transport, etc.

The Sub-contractor shall allow for providing holidays and transport for work people, and for complying with Legislation, Regulations and Union Agreements.

1.17 **Import Duty and Value Added Tax**

The Sub-contractor will be required to pay full Import Duty and Value Added Tax on all items of equipment, fittings and plant, whether imported or locally manufactured. The tenderer shall make full allowance in his tender for all such taxes

1.18 **Insurance Company Fees**

Attention is drawn to the tenderers to allow for all necessary fees, where known, that may be payable in respect of any fees imposed by Insurance Companies or statutory authorities for testing or inspection.

No allowance shall be made to the Sub-contractor with respect to fees should these have been omitted by the tenderer due to his negligence in this respect.

1.19 **Provision of Services by the Main Contractor**

In accordance with Clause 1.08 of this Specification the Main Contractor shall make the following facilities available to the Sub-contractor:

a) Attendance on the Sub-contractor and the carrying out of all work affecting the structure of the building which may be necessary, including all chasing, cutting away and making good brickwork, etc., except that all plugging for fixing, fittings, machinery, fan ducting, etc., and all drilling and tapping of steel work shall be the responsibility of the Sub-contractor. Any purpose made fixing brackets shall not constitute Builder's Work and shall be provided and installed by the Sub-contractor unless stated hereinafter otherwise.

b) The provision of temporary water, lighting and power: All these services utilized shall be paid for by the Main Contractor. The Sub-contractor shall, however, allow for additional connections/extensions required for his purposes.

c) Fixing of anchorage and pipe supports in the shuttering, except that all anchorage shall be
Supplied by the Sub-contractor who shall also supply the Main Contractor with fully dimensioned drawings detailing the exact locations.

d) i) Provision of scaffolding, cranes, etc. but only in so far as it is required for the Main Contract Works. It shall be the Sub-contractor's responsibility to liaise with the Main Contractor to ensure that there is maximum co-operation with other Sub-contractors in the use of scaffolding, cranes, etc.

ii) Any specialist scaffolding, cranes, etc. by the Sub-contractor for his own exclusive use shall be paid for by the Sub-contractor.

1.20 **Suppliers**

The Sub-contractor shall submit names of any supplier for the materials to be incorporated, to the Engineer for approval. The information regarding the names of the suppliers may be submitted at different times, as may be convenient, but no sources of supply will be changed without prior approval.

Each supplier must be willing to admit the Engineer or his representative to his premises during working hours for the purpose of examining or obtaining samples of the materials in question.

1.21 **Samples and Materials Generally**

The Sub-contractor shall, when required, provide for approval at no extra cost, samples of all materials to be incorporated in the works. Such samples, when approved, shall be retained by the Engineer and shall form the standard for all such materials incorporated.

1.22 **Administrative Procedure and Contractual Responsibility**

Wherever within the Specification it is mentioned or implied that the Sub-contractor shall deal direct with the Employer or Engineer, it shall mean "through the Contractor" who is responsible to the Employer for the whole of the works including the Sub-contract Works.

1.23 **Bills of Quantities**

The Bills of Quantities have been prepared in accordance with the standard method of measurement of Building Works for East Africa, first Edition, Metric, 1970. All the Quantities are based on the Contract Drawings and are provisional and they shall not be held to gauge or to limit the amount or description of the work to be executed by the Sub-contractor but the value thereof shall be deducted from the Sub-contract Sum and the value of the work ordered by the Engineer and executed there under shall be measured and valued by the Engineer in accordance with the conditions of the Sub-contract.

All work liable to adjustment under this Sub-contract shall be left uncovered for a reasonable time to allow measurements needed for such adjustment to be taken by the Quantity Surveyor or Engineer. Immediately the work is ready for measuring the Sub-contractor shall give notice to the Quantity Surveyor or Engineer to carry out measurements before covering up. If the Sub-contractor shall make default in these respects he shall, if the Project Manager so directs, uncover the work to enable the necessary measurements to be taken and afterwards reinstate at his own expense.

1.24 **Sub-contractor's Office in Kenya**

The Sub-contractor shall maintain (after first establishing if necessary) in Kenya an office staffed with competent Engineer Manager and such supporting technical and clerical staff as necessary to control and coordinate the execution and completion of the Sub-contract Works.

The Engineer Manager and his staff shall be empowered by the Sub-contractor to represent him at meetings and in discussions with the Main Contractor, the Engineer and other parties who may be concerned and any liaison with the Sub-contractor's Head Office on matters relating to the design, execution and completion of the Sub-contract Works shall be effected through his office in Kenya.

It shall be the Sub-contractor's responsibility to procure work permits, entry permits, licenses, registration, etc., in respect of all expatriate staff.

The Sub-contractor shall prepare a substantial proportion of his Working Drawings at his office in Kenya. No reasons for delays in the preparation or submission for approval or otherwise of such drawings or proposals will be accepted on the grounds that the Sub-contractor's Head Office is remote from his office in Nairobi or the site of the Sub-contract Works or otherwise.

1.25 **Builder's Work**

All chasing, cutting away and making good will be done by the Main Contractor but the Sub-contractor shall mark out in advance and shall be responsible for accuracy of the size and position of all holes and chases required.

The Sub-contractor shall drill and plug holes in floors, walls, ceiling and roof for securing services and equipment requiring screw or bolt fixings.

Any purpose made fixing brackets shall not constitute builder's work and shall be provided and installed by the Sub-contractor unless stated hereinafter to the contrary.

1.26 **Structural Provision for the Works**

Preliminary major structural provision has been made for the Sub-contract Works based on outline information ascertained during the preparation of the Specification.

The preliminary major structural provision made will be deemed as adequate unless the Sub-contractor stated otherwise when submitting his tender.

Any major structural provision or alteration to major structural provisions required by the Sub-contractor shall be shown on Working Drawings to be submitted to the Engineer within 30 days of being appointed.

No requests for alterations to preliminary major structural provisions will be approved except where they are considered unavoidable by the Engineer. In no case will they be approved if building work is so far advanced as to cause additional costs or delays in the work of the Main Contractor.

1.27 Position of Services, Plant, Equipment, Fittings and Apparatus

The Contract Drawings give a general indication of the intended layout. The position of the equipment and apparatus, and also the exact routes of the ducts, main and distribution pipework shall be confirmed before installation is commenced. The exact siting of appliances, pipework, etc., may vary from that indicated.

The routes of services and positions of apparatus shall be determined by the approved dimensions detailed in the Working Drawings or on site by the Engineer in consultation with the Sub-contractor or the Main Contractor.

Services throughout the ducts shall be arranged to allow maximum access along the ducts and the services shall be readily accessible for maintenance. Any work which has to be re-done due to negligence in this respect shall be the Sub-contractor's responsibility.

The Sub-contractor shall be deemed to have allowed in his Sub-contract Sum for locating terminal points of services (e.g. lighting, switches, socket outlets, lighting points, control switches, thermostats and other initiating devices, taps, stop cocks) in positions plus or minus 1.2m horizontally and vertically from the locations shown on Contract Drawings. Within these limits no variations in the Sub-contract Sum will be made unless the work has already been executed in accordance with previously approved Working Drawings and with the approval of the Engineer.

1.28 **Checking of Work**

The Sub-contractor shall satisfy himself to the correctness of the connections he makes to all items of equipment supplied under the Sub-contract agreement and equipment supplied under other contracts before it is put into operation. Details of operation, working pressures, temperatures, voltages, phases, power rating, etc., shall be confirmed to others and confirmation received before the system is first operated.

1.29 **Setting to Work and Regulating System**

The Sub-contractor shall carry out such tests of the Sub-contract Works as required by British Standard Specifications or equal and approved codes as specified hereinafter and as customary.

No testing or commissioning shall be undertaken except in the presence of and to the satisfaction of the Engineer unless otherwise stated by him (Sub-contractor's own preliminary and proving tests excepted).

It will be deemed that the Sub-contractor has included in the Sub-contract Sum for the costs of all fuel, power, water and the like, for testing and commissioning as required as part of the Sub-contract Works. He shall submit for approval to the Engineer a suitable programme for testing and commissioning. The Engineer and Employer shall be given ample warning in writing, as to the date on which testing and commissioning will take place.

The Sub-contractor shall commission the Sub-contract Works and provide attendance during the commissioning of all services, plant and apparatus connected under the Sub-contract Agreement or other Sub-contract Agreements, related to the project.

Each system shall be properly balanced, graded and regulated to ensure that correct distribution is achieved and where existing installations are affected, the Sub-contractor shall also regulate these systems to ensure that their performance is maintained.

The proving of any system of plant or equipment as to compliance with the Specification shall not be approved by the Engineer, except at his discretion, until tests have been carried out under operating conditions pertaining to the most onerous conditions specified except where the time taken to obtain such conditions is unreasonable or exceeds 12 months after practical completion of the Sub-contract Works.

1.30 **Identification of Plant Components**

The Sub-contractor shall supply and fix identification labels to all plant, starters, switches and items of control equipment including valves, with white traffolyte or equal labels engraved in red lettering denoting its name, function and section controlled. The labels shall be mounted on equipment and in the most convenient positions. Care shall be taken to ensure the labels can be read without difficulty. This requirement shall apply also to major components of items of control equipment.

Details of the lettering of the labels and the method of mounting or supporting shall be forwarded to the Engineer for approval prior to manufacture.

1.31 **Contract Drawings**

The Contract Drawings when read in conjunction with the text of the Specification, have been completed in such detail as was considered necessary to enable competitive tenders to be obtained for the execution and completion of the Sub-contract works.

The Contract Drawings are not intended to be Working Drawings and shall not be used unless exceptionally they are released for this purpose.

1.32 **Working Drawings**

The Sub-contractor shall prepare such Working Drawings as may be necessary. The Working Drawings shall be complete in such detail not only that the Sub-contract Works can be executed on site but also that the Engineer can approve the Sub-contractor's proposals, detailed designs and intentions in the execution of the Sub-contract Works.

If the Sub-contractor requires any further instructions, details, Contract Drawings or information drawings to enable him to prepare his Working Drawings or proposals, the Sub-contractor shall accept at his own cost, the risk that any work, commenced or which he intends to commence at site may be rejected.

The Engineer, in giving his approval to the Working Drawings, will presume that any necessary action has been, or shall be taken by the Sub-contractor to ensure that the installations shown on the Working Drawings have been cleared with the Main Contractor and any other Sub-contractors whose installations and works might be affected.

If the Sub-contractor submits his Working Drawings to the Engineer without first liaising and obtaining clearance for his installations from the Main Contractor and other Sub-contractors whose installations and works might be affected, then he shall be liable to pay for any alterations or modification to his own, the Main Contractor's or other Sub-contractor's installations and works, which are incurred, notwithstanding any technical or other approval received from the Engineer.

Working Drawings to be prepared by the Sub-contractor shall include but not be restricted to the following:

a) Any drawings required by the Main Contractor, or Engineer to enable structural provisions
to be made including Builder's Working Drawings or Schedules and those for the detailing of holes, fixings, foundations, cables and paperwork ducting below or above ground or in or outside or below buildings.

b) General Arrangement Drawings of all plant, control boards, fittings and apparatus or any part thereof and of installation layout arrangement of such plant and apparatus.

c) Schematic Layout Drawings of services and of control equipment.

d) Layout Drawings of all embedded and non-embedded paperwork, ducts and electrical conduits.

e) Complete circuit drawings of the equipment, together with associated circuit description.

f) Such other drawings as are called for in the text of the Specification or Schedules or as the Engineer may reasonably require.

Three copies of all Working Drawings shall be submitted to the Engineer for approval. One copy of the Working Drawings submitted to the Engineer for approval shall be returned to the Sub-contractor indicating approval or amendment therein.

Six copies of the approved Working Drawings shall be given to the Main Contractor by the Sub-contractor for information and distribution to other Sub-contractors carrying out work associated with or in close proximity to or which might be affected by the Sub-contract Works.

Approved Working Drawings shall not be departed from except as may be approved or directed by the Engineer.

Approval by the Engineer of Working Drawings shall neither relieve the Sub-contractor of any of his obligations under the Sub-contract nor relieve him from correcting any errors found subsequently in the Approved Working Drawings or other Working Drawings and in the Sub-contract Works on site or elsewhere associated therewith.

The Sub-contractor shall ensure that the Working Drawings are submitted to the Project Manager for approval at a time not unreasonably close to the date when such approval is required. Late submission of his Working Drawings will not relieve the Sub-contractor of his obligation to complete the Sub-contract Works within the agreed Contract Period and in a manner that would receive the approval of the Architect.

1.33 **Record Drawings (As Installed) and Instructions**

During the execution of the Sub-contract Works the Sub-contractor shall, in a manner approved by the Engineer record on Working or other Drawings at site all information necessary for preparing Record Drawings of the installed Sub-contract Works. Marked-up Working or other Drawings and other documents shall be made available to the Engineer as he may require for inspection and checking.

Record Drawings, may, subject to the approval of the Engineer, include approved Working Drawings adjusted as necessary and certified by the Sub-contractor as a correct record of the installation of the Sub-contract Works.

They shall include but not restricted to the following drawings or information:

a) Working Drawings amended as necessary but titled "Record Drawings" and certified as a true record of the "As Installed" Sub-contract Works. Subject to the approval of the Engineer such Working Drawings as may be inappropriate may be omitted.
b) Fully dimensioned drawings of all plant and apparatus.
c) General arrangement drawings of equipment, other areas containing plant forming part of the Sub-contract Works and the like, indicating the accurate size and location of the plant and apparatus suitability cross-referenced to the drawings mentioned in (b) above and hereinafter.
d) Routes, types, sizes and arrangement of all pipework and ductwork including dates of installation of underground pipework.
e) Relay adjustment charts and manuals.
f) Routes, types, sizes and arrangement of all electric cables, conduits, ducts and wiring including the dates of installation of buried works.
g) System schematic and trunking diagrams showing all salient information relating to control and instrumentation.
h) Grading Charts.
i) Valve schedules and locations suitability cross-referenced.
j) Wiring and piping diagrams of plant and apparatus.
k) Schematic diagrams of individual plant, apparatus and switch and control boards. These diagrams to include those peculiar to individual plant or apparatus and also those applicable to system operation as a whole.
l) Operating Instruction

Schematic and wiring diagrams shall not be manufacturer's multipurpose general issue drawings. They shall be prepared specially for the Sub-contract Works and shall contain no spurious or irrelevant information.

Marked-up drawings of the installation of the Sub-contract Works shall be kept to date and completed by the date of practical or section completion. Two copies of the Record Drawings of Sub-contract Works and two sets of the relay adjustment and grading charts and schematic diagrams on stiff backing shall be provided not later than one month later.

The Sub-contractor shall supply for fixing in sub-stations, switch-rooms, boiler houses, plant rooms, pump houses, the office of the Maintenance Engineer and other places, suitable valve and instructions charts, schematic diagrams of instrumentation and of the electrical reticulation as may be requested by the Engineer providing that the charts, diagrams, etc., relate to installations forming part of the Sub-contract Works. All such charts and diagrams shall be of suitable plastic material on a stiff backing and must be approved by the Engineer before final printing.

Notwithstanding the Sub-contractor's obligations referred to above, if the Sub-contractor fails to produce to the Engineer's approval, either:-

a) The Marked-up Drawings during the execution of the Sub-contract Works or
b) The Record Drawings, etc., within one month of the Section or Practical Completion

The Engineer shall have these drawings produced by others. The cost of obtaining the necessary information and preparing such drawings, etc., will be recovered from the Sub-contractor.

1.34 **Maintenance Manual**

Upon Practical Completion of the Sub-contract Works, the Sub-contractor shall furnish the Engineer four copies of a Maintenance Manual relating to the installation forming part of all of the Sub-contract Works.

The manual shall be loose-leaf type, International A4 size with stiff covers and cloth bound. It may be in several volumes and shall be sub-divided into sections, each section covering one Engineering service system. It shall have a ready means of reference and a detailed index.

There shall be a separate volume dealing with Air Conditioning and Mechanical Ventilation installation where such installations are included in the Sub-contract Works.

The manual shall contain full operating and maintenance instructions for each item of equipment, plant and apparatus set out in a form dealing systematically with each system. It shall include as may be applicable to the Sub-contract Works the following and any other items listed in the text of the Specifications:

a) System Description.
b) Plant
c) Valve Operation
d) Switch Operation
e) Procedure of Fault Finding
f) Emergency Procedures
g) Lubrication Requirements
h) Maintenance and Servicing Periods and Procedures
i) Colour Coding Legend for all Services
j) Schematic and Writing Diagrams of Plant and Apparatus
k) Record Drawings, true to scale, folded to International A4 size
l) Lists of Primary and Secondary Spares.

The manual is to be specially prepared for the Sub-contract Works and manufacturer's standard descriptive literature and plant operating instruction cards will not be accepted for inclusion unless exceptionally approved by the Engineer. The Sub-contractor shall, however, affix such cards, if suitable, adjacent to plant and apparatus. One spare set of all such cards shall be furnished to the Engineer.

1.35 **Hand-over**

The Sub-contract Works shall be considered complete and the Maintenance and Defects Liability Period shall commence only when the Sub-contract Works and supporting services have been tested, commissioned and operated to the satisfaction of the Engineer and officially approved and accepted by the Employer, provided always that the handing over of the Sub-contract Works shall be coincident with the handing over of the Main Contract Works.

The procedure to be followed will be as follows:

a) On the completion of the Sub-contract Works to the satisfaction of the Engineer and the Employer, the Sub-contractor shall request the Engineer, at site to arrange for handing over.

b) The Engineer shall arrange a Hand-over Meeting or a series thereof, at site.
c) The Sub-contractor shall arrange with the Engineer and Employer for a complete demonstration of each and every service to be carried out and for instruction to be given to the relevant operation staff and other representatives of the Employer.
d) In the presence of the Employer and the Engineer, Hand-over will take place, subject to Agreement of the Hand-over Certificates and associated check lists.

1.36 **Painting**

It will be deemed that the Sub-contractor allowed for all protective and finish painting in the Sub-contract Sum for the Sub-contract Works, including colour coding of service pipework to the approval of the Engineer. Any special requirements are described in the text of the Specifications.

1.37 **Spares**

The Sub-contractor shall supply and deliver such spares suitably protected and boxed to the Engineer's approval as are called for in the Specifications or in the Price Schedules.

1.38 **Testing and Inspection – Manufactured Plant**

The Engineer reserves the right to inspect and test or witness of all manufactured plant equipment and materials.

The right of the Engineer relating to the inspection, examination and testing of plant during manufacture shall be applicable to Insurance companies and inspection authorities so nominated by the Engineer.

The Sub-contractor shall give two week's notice to the Engineer of his intention to carry out any inspection or tests and the Engineer or his representative shall be entitled to witness such tests and inspections

Six copies of all test certificates and performance curves shall be submitted as soon as possible after the completion of such tests, to the Engineer for his approval.

Plant or equipment which is shipped before the relevant test certificate has been approved by the Engineer shall be shipped at the Sub-contractor's own risk and should the test certificate not be approved new tests may be ordered by the Engineer at the Sub-contractor's expense.

The foregoing provisions relate to tests at manufacturer's works and as appropriate to those carried out at site.

1.39 **Testing and Inspection -Installation**

Allow for testing each section of the Sub-contract Works installation as described hereinafter to the satisfaction of the Engineer.

1.40 **Labour Camps**

The Sub-contractor shall provide the necessary temporary workshop and mess-room in position to be approved by the Architect.

The work people employed by the Sub-contractor shall occupy or be about only that part of the site necessary for the performance of the work and the Sub-contractor shall instruct his employees accordingly.

If practicable, W.C. accommodation shall be allocated for the sole use of the Sub-contractor's workmen and the Sub-contractor will be required to keep the same clean and disinfected, to make good any damage thereto and leave in good condition.

1.41 **Storage of Materials**

Space for storage will be provided by the Main contractor but the sub-contractor will be responsible for provision of any lock-up sheds or stores required.

Nominated Sub-contractors are to be made liable for the cost of any storage accommodation provided specially for their use. No materials shall be stored or stacked on suspended slabs without the prior approval of the Project manager.

1.42 **Initial Maintenance**

The sub-contractor shall make routine maintenance once a month during the liability for the Defects Period and shall carry out all necessary adjustments and repairs, cleaning and oiling of moving parts. A monthly report of the inspection and any works done upon the installation shall be supplied to the Engineer.

The sub-contractor shall also provide a 24 -hour break-down service to attend to faults on or malfunctioning of the installation between the routine visits of inspection.

The sub-contractor shall allow in the sub-contract Sum of the initial maintenance, inspection and break-down service and shall provide for all tools, instruments, plant and scaffolding and the transportation thereof, as required for the correct and full execution of these obligations and the provision, use or installation of all materials as oils, greases, sandpaper, etc., or parts which are periodically renewed such as brake linings etc., or parts which are faulty for any reason whatsoever excepting always Acts of God such as storm, tempest, flood, earthquake and civil revolt, acts of war and vandalism.

1.43 **Maintenance and Servicing After Completion of the Initial Maintenance**

The sub-contractor shall, if required, enter into a maintenance and service agreement with the employer for the installation for a period of up to five years from the day following the last day of the liability for Defects Period which offers the same facilities as specified in Clause 1.42 (Initial Maintenance).

The terms of any such agreement shall not be less beneficial to the employer than the terms of Agreements for either similar installation.

The sub-contractor shall submit with his tender for the works, where called upon a firm quotation for the maintenance and service of the installation as specified herein, which shall be based upon the present day costs and may be varied only to take into account increases in material and labour unit rate costs between the time of tendering and the signing of the formal maintenance and service agreement and which shall remain valid and open for acceptance by the Employer to and including the last day of the fifth complete calendar month following the end of the liability for Defects Period.

1.44 **Trade Names**

Where trade names of manufacturer's catalogue numbers are mentioned in the Specification or the Bills of Quantities, the reference is intended as a guide to the type of article or quality of material required. Alternate brands of equal and approved quality will be acceptable.

1.45 **Water and Electricity for the Works**

These will be made available by the Main Contractor. The Sub-contractor shall be liable for the cost of any water or electric current used and for any installation provided especially for their own use by the Main Contractor.

1.46 **Protection**

The sub-contractor shall adequately cover up and protect his own work to prevent injury and also to cover up and protect from damage all parts of the building or premises where work is performed by him under the Contract.

1.47 **Defects After Completion**

The defects liability period will be 6 months from the date of completion of the Main Contract as certified by the Engineer.

1.48 **Damages for Delay**

Liquidated and Ascertained damages as stated in the Main Contract Agreement will be claimed against the Main Contract for any unauthorised delay in completion. The Sub-contractor shall be held liable for the whole or a portion of these damages should he cause delay in completion.

1.49 **Clear Away on Completion**

The sub-contractor shall, upon completion of the works, at his own expense, remove and clear away all plant, equipment, rubbish and unused materials, and shall leave the whole of the works in a clean and tidy state, to the satisfaction of the Engineer. On completion, the whole of the works shall be delivered up clean, complete and perfect in every respect to the satisfaction of the Engineer.

1.50 **Final Account**

On completion of the works the sub-contractor shall agree with the Engineer the value of any variations outstanding and as soon as possible thereafter submit to the Engineer his final statement of account showing the total sum claimed sub-divided as follows:

Statement A - detailing the tender amounts less the Prime Cost and Provisional Sums, included therein.

Statement B - detailing all the variation orders issued on the contract.

Statement C - Summarizing statement A and B giving the net grand total due to the Contractor for the execution of the Contract.

1.51 **Fair Wages**

The sub-contractor shall in respect of all persons employed anywhere by him in the execution of the sub-contract, in every factory, workshop or place occupied or used by him for execution of the Contract, observe and fulfill the following conditions:

a) The sub-contractor shall pay rates of the wages and observe hours and conditions of labour not less favourable than those established for the trade or industry in the district where work is carried out.

b) In the absence of any rates of wages, hours or conditions of labour so established the sub-contractor shall pay rates and observe hours and conditions of labour are not less favourable than the general level of wages, hours and conditions observed by other employers whose general circumstances in the trade or industry in which the Contractor is engaged are similar.

1.52 Supervision

During the progress of the works, the Sub-contractor shall provide and keep constantly available for consultation on site an experienced English - speaking Supervisor and shall provide reasonable office facilities, attendance, etc., for the Supervisor.

In addition, during the whole of the time the works are under construction, the sub-contractor shall maintain on site one experienced foreman or charge-hand and an adequate number of fitters, etc., for the work covered by the Specification. The number of this staff shall not be reduced without the prior written approval of the Project manager or Engineer.

Any instructions given to the Supervisor on site shall be deemed to have been given to the sub-contractor.

One copy of this Specification and one copy of each of the Contract Drawings (latest issue) must be retained on site at all times, and available for reference by the Engineer or sub-contractor.

1.53 Test Certificates

The Sub-contractor shall provide the Engineer with three copies of all test reports or certificates that are or may be required by this Specification.

1.54 Labour

The Sub-contractor shall provide skilled and unskilled labour as may be necessary for completion of the contract.

1.55 Discount to the Main Contractor

No discount to the Main Contractor will be included in the tender for this installation.

1.56 Guarantee

The whole of the work will be guaranteed for a period of six months from the date of the Engineer's certification of completion and under such guarantee the Sub-contractor shall remedy at his expense all defects in materials and apparatus due to faulty design, construction or workmanship which may develop in that period.

1.57 Direct Contracts

Notwithstanding the foregoing conditions, the Government reserves the right to place a "Direct Contract" for any goods or services required in the works which are covered by a P.C Sum in the Bills of Quantities and to pay for the same direct. In any such instance, profit relative to the P.C Sum in the priced Bills of Quantities will be adjusted as deserved for P.C Sum allowed.

1.58 Attendance Upon the Tradesmen etc

The Contractor shall allow for the attendance of trade upon trade and shall afford any tradesmen or other persons employed for the execution of any work not included in this contract every facility for carrying out their work and also for the use of ordinary scaffolding. The contractor however, shall not be required to erect any special scaffolding for them.

1.59 Trade Unions

The contractor shall recognize the freedom of his work people to be members of trade unions.

1.60 Local and other Authorities notices and fees

The contractor shall comply with and give all notices required by any Regulations, Act or by Law of any Local Authority or of any Public Service, Company or Authority who have any jurisdiction with regard to the works or with those systems the same are or will be connected and he shall pay and indemnify the Government against any fees or charges legally demandable under any regulation or by-law in respect of the works; provided that the said fees and charges if not expressly included in the contract sum or stated by way of provisional sum shall be added to the contract sum.

The contractor before making any variation from the contract drawings or specification necessitated by such compliance shall give the Project Manager written notice specifying and giving the reason for such variation and applying for instructions in reference thereto.

If the contractor within seven days of having applied for the same does not receive such instructions, he shall proceed with the works in conforming to the provision regulation or by-law in question and any variation thereby necessitated shall be deemed to be a variation in accordance to the conditions of contract.

1.61 Assignment or subletting

The contractor shall not without the written consent of the Project Manager assign this contract or sublet any portion of the works, provided that such consent shall not be unreasonably withheld to the prejudice of the contractor.

1.62 Partial Completion

If the Government shall take over any part or parts works, apparatus, equipment etc. then within seven days from the date on which the Government shall have taken possession of the relevant part, the Project Manager shall issue a Certificate stating his estimate of the approximate total value of the works which shall be the total value of that part and practical completion of the relevant part shall be deemed to have occurred, and the Defects Liability Period in respect of the relevant part be deemed to have commenced on the date Government shall have taken possession thereof.

The contractor shall make good any defects or other faults in the relevant part that had been deemed complete.

The contractor shall reduce the value of insurance by the full value of the relevant part

The contractor shall be paid for the part of works taken possession by the Government

1.63 Temporary Works

Where temporal works shall be deemed necessary, such as Temporary lighting, the contractor shall take precaution to prevent damage to such works.

The contractor shall include for the cost of and make necessary arrangements with the Project Manager for such temporary works. For temporary lighting, electricity shall be metered and paid for by the contract

1.64 Patent Rights

The contractor shall fully indemnify the Government of Kenya; against any action, claim or proceeding relating to infringement of any patent or design rights, and pay any royalties which may be payable in respect of any article or any part thereof, which shall have been supplied by the contractor to the Project Manager. In like manner the Government of Kenya shall fully indemnify the contractor against any such action, claim or proceedings for infringement under the works, the design thereof of which shall have been supplied by the Project Manager to the contractor, but this indemnify shall apply to the works only, and any permission or request to manufacture to the order of the Project Manager shall not relieve the contractor from liability should he manufacture for supply to other buyers.

1.65 Mobilization and Demobilization

The contractor shall mobilize labour plant and equipment to site according to his programme and schedule of work. He shall ensure optimum presence and utilization of labour, plant and equipment. He should not pay and maintain unnecessary labour force or maintain and service idle plant and equipment. Where necessary he shall demobilize and mobilize the labour, plant and equipment, as he deems fit to ensure optimum progress of the works and this shall be considered to be a continuous process as works progress. He shall make provision for this item in his tender. No claim will be entertained where the contractor has not made any provision for mobilization and demobilization of labour, plant and equipment in the preliminary bills of quantities or elsewhere in this tender.

1.66 Extended Preliminaries

Where it shall be necessary to extend the contract period by the Project manager the contractor shall still ensure availability on site, optimum labour, materials, plant and equipment. The contractor shall make provision for extended preliminaries, should the contract period be extended and this shall be in a form of a percentage of the total Contractor works. Where called upon in the Appendix to these Preliminaries the Contractor shall insert his percentage per month for extended preliminaries that shall form basis for compensation.

Lack of inserting the percentage shall mean that the sub-contractor has provided for this requirement elsewhere in the Bills of Quantities.

1.67 Supervision by Engineer and Site Meetings

A competent Project Engineer appointed by the Engineer as his representative shall supervise the Contract works. The Project Engineer shall be responsible for issuing all the site instructions in any variations to the works and these shall be delivered through the Contractor with the authority of the Project Manager. Any instructions given verbal shall be confirmed in writing.

The project engineer and (or) the Engineer shall attend management meetings arranged by the Project Manager and for which the Contractor or his representative shall also attend. For the purpose of supervising the project, provisional sums are provided to cover for transport and allowances. The Contractor shall in his tender allow for the provision of management meetings and site inspections, as instructed by the Engineer, and also profit and attendance on these funds. The funds shall be expended according to Project Manager's instructions to the contractor.

1.68 Amendment to Scope of Contract Works

No amendment to scope of sub-contract works is expected and in case of amendment or modification to scope of work, these shall be communicated to all tenderers in sufficient time before the deadline of the tender submission. However during the contract period and as the works progress the Project Manager may vary the works as per conditions of contract by issuing site instructions.
No claims shall be entertained on account of variation to scope of works either to increase the works (pre-financing) or reduction of works (loss of profit-see clause 1.70)

1.69 Contractor Obligation and Employers Obligation

The sub-contractor will finance all activities as part of his obligation to this contract. The employer shall pay interim payment for materials and work completed on site as his obligation in this contract, as the works progresses. No claims will be entertained for pre-financing of the project by the sub-contractor, or for loss of profit (expectation loss) in case of premature termination, reduction or increase of works as the sub-contractor shall be deemed to have taken adequate measures in programming his works and expenditure and taken necessary financial precaution while executing the works. No interest shall be payable to the Contractor, except as relates to late payment as in the conditions of contract clause 23.3. The contractor shall where called upon, insert his price to compensate for any of the occurrence stated here (premature termination, reduction or increase of works), as a percentage of the contract sum in the Appendix to this section.

1.70 APPENDIX TO SUB-CONTRACT PRELIMINARIES AND GENERAL CONDITIONS

1. ADD TO CLAUSE 1.17

Prices quoted shall include **16% VAT**

In accordance with current Government policy, the **3% Withholding Tax** and **6% advance V,A.T** shall be deducted from all payments made to the sub-contractor, and the same shall subsequently be forwarded to the Kenya Revenue Authority (KRA). The applicable taxes shall be varied according to the Act and Regulations in force.

GENERAL MECHANICAL SPECIFICATIONS

GENERAL MECHANICAL SPECIFICATION

2.1 GENERAL

.

This section specifies the general requirements for plant, equipment and materials forming part of the Contract Works and shall apply except where specifically stated elsewhere in the Specification or on the Contract Drawings

2.2 QUALITY OF MATERIALS

All plant, equipment and materials supplied as part of the Contract Works ' shall be new and of first-class commercial quality, shall be free from defects and imperfections and where indicated shall be of grades and classifications designated herein.

All products or materials not manufactured by the Contractor shall be the products of reputable manufacturers and so far as the provisions of the Specification is concerned shall be as if they had been manufactured by the Contractor.
Materials and apparatus required for the complete installation as called for by the Specification and Contract Drawings shall be supplied by the Contractor unless mention is made otherwise.

Materials and apparatus supplied by others for installation and connection by the Contractor shall be carefully examined on receipt and stored. Should any defects be noted, the Contractor shall immediately notify the Engineer.

Defective equipment or that damaged in the course of installation or tests shall be replaced or repaired to the approval of the Engineer.

2.3 REGULATIONS AND STANDARDS

The Contract works shall comply with the current editions of the following:

(a) The Kenya Government Regulations.
(b) The United Kingdom Institution of Electrical Engineering Regulations for the electrical equipment of buildings.
(c) The United Kingdom Chartered Institution of Building Services Engineers[1] Guides.
(d) The United Kingdom Loss Prevention Council.
(e) British Standards and Codes of Practice as published by the British Standards Institution.
(f) The Local Council By-Laws.

(g) The Kenya Building Regulations.

2.4 ELECTRICAL REQUIREMENTS

Plant and equipment supplied under this Contract shall be complete with all necessary motor starters, control boards, and other control apparatus. Where control panels incorporating several starters are supplied they shall be complete with a main isolator.

The supply power up to and including local isolators will be provided and installed by the Electrical Contractor. All other wiring shall be as described in Section III- the Particular Specification.

The Contractor shall supply three copies of all schematic, cabling and wiring diagrams for the Engineer's approval.

The starting current of all electric motors and equipment shall not exceed the maximum permissible starting currents described in the Kenya Power and Lighting Company's By-Laws.

All electrical plant and equipment supplied b}^ the Contractor shall be rated for the supply voltage and frequency obtained in Kenya, that is 415 volts, 50Hz, 3-phase or 240 volts, 50Hz, 1-Phase as specified in Section III-the Particular Specification.

Any equipment that is not rated for the above voltage and frequencies may be rejected by the Engineer.

2.5 TRANSPORT AND STORAGE

All plant and equipment shall, during transportation be suitably packed, crated and protected to minimize the possibility of damage, and to prevent corrosion or other deterioration.

On arrival at site all plant and equipment shall be examined and any damage to parts and protective priming coats made good before storage or installation.
Adequate measures shall be taken by the Contractor to ensure that plant arid equipment do not suffer any deterioration during storage.
Prior to installation all piping, plant and equipment shall be thoroughly cleaned.

If, in the opinion of the Engineer any equipment has deteriorated or been damaged to such an extent that it is not suitable for installation; the Contractor shall replace this equipment at his own costs.

2.6 SITE SUPERVISION

The Contractor shall ensure that there is an English speaking supervisor on the site at all times during normal working hours.

2.7 INSTALLATION

Installation of all special plant and equipment shall be carried out by the Contractor under adequate supervision from skilled staff provided by the plant and equipment manufacturer or his appointed agent, in accordance with the best standards of modern practice and to the relevant regulations and standards described under Clause 2.3 of this section.

2.8 TESTING

2.8.1 General

All testing shall be carried out to the entire satisfaction of the Engineer
The following sub-clauses are intended to define the Contractor's responsibilities with respect to testing and inspection.

2.8.2 Materials Tests

All materials for plant and equipment to be installed under this contract shall be tested, unless otherwise directed, in accordance with the relevant B.S. Specification concerned.

For materials "where no B.S. Specification exists tests are to be made in accordance "with the best modern commercial methods to the approval of the Engineer having regard to the particular type and application of the materials concerned.

The Contractor shall prepare specimens and performance tests and analysis to demonstrate conformance of the various materials with the applicable standards.

If stock material, which has not been specifically manufactured for the pant and equipment specified is used, then the Contractor shall submit satisfactory evidence to the Engineer that such materials conform to the requirements stated herein which case test of material may be partially or completely waived.

Certified will test reports of plates, piping and other materials shall be deemed acceptable.

2.8.3 Manufactured Plant and Equipment - Works Tests

The rights of the Engineer relating to the inspection, examination and testing of plant and equipment during manufacture shall be applicable to the Insurance Companies or Inspection Authorities so nominated by the Engineer.
The Contractor shall give two week's notice to the Engineer of manufacturer's intention to carry out work tests and inspection.

The Engineer or his representative shall be entitled to witness such tests and

inspections. The costs of such tests and inspections shall be borne by the Contractor.
Six copies of all test and inspection certificates and performance graphs shall be submitted to the Engineer for his approval as soon as possible after the completion of such test and inspections.

Plant and equipment which is shipped before the relevant test certificate has been approved by the Engineer shall be shipped at the Contractor's own risk and should the test and inspection certificate not be approved, new test may be ordered by the Engineer at the Contractor's expense.

2.8.4 Pressure Testing

All pipework installation shall be pressure tested in accordance with the requirements of the various sections of this Specification. The installation may be tested in sections to suit the progress of the works but all tests must be carried out before the work is buried or concealed behind building finishes. All tests must be witnessed by the Engineer or his representative, and the Contractor shall give 48 hours notice to the Engineer of his intention to carry out such tests.

Any pipework that is buried or concealed before witnessed pressure tests have been carried out shall be exposed at the expense of the Contractor and the specified tests shall then be applied.

The Contractor shall prepare test certificates for signature by the Engineer and shall keep a progressive and up-to-d ate record of the sections of the work that have been tested.

2.9 COLOUR CODING

Unless stated otherwise in the Particular Specification all pipework shall be colour coded in accordance with the latest edition of B.S. 1710.

2.I0 WELDING

2.10.1 Preparation

Joints to be made by welding shall be accurately cut to size with edges sheared, flame cut or machined to suit the required type of joint. The prepared surfaces shall be free from all visible defects such as laminations, surface imperfections due to shearing or flame cutting operation, etc., and shall be free from rust scale, grease and other foreign matter.

2.10.2 Method

All welding shall be carried out by the electric arc process using covered electrodes in accordance with B. S. 639.

Gas welding may be employed in certain circumstances providing that prior approval is obtained from the Engineer.

2.10.3 Welding Codes and Construction

All welded joints shall be carried out in accordance with the following specification: -

(a) Pipe Welding:

All pipe welds shall be carried out in accordance with the requirements of B.S. 806.

(b) General Welding

All welding of mild steel components other than pipework shall comply with the general requirements of B.S. 5135: 1974.

2.10.4 Welders' Qualifications

Any welder employed on this contract shall have passed the trade tests as laid down by the Government of Kenya.

The Engineer may require to see the appropriate certificate obtained by any welder and should it be proved that the welder does not have the necessary qualifications the Engineer may instruct the Contractor to replace him by a qualified welder.

FIRE ALARM SYSTEM PARTICULAR SPECIFICATIONS

A. CABLES AND WIRING

1.0 Cable type

The satisfactory operation of a fire alarm system depends on the interconnection made between the component items and it is essential that connections between trigger devices function correctly when the device operates. The destruction of a cable connected to a trigger device after is has operated should not affect the sounding of the alarm since this should be maintained by the control/indicating equipment without the need for a continued signal from the trigger device.

Certain cables may be required to function correctly for a significant period after being attacked by fire. These include the power supply cables to the control equipment and the cables

connecting the alarm sounders to the control equipment. It should be noted that the monitoring of cables and connections – whilst giving a warning of damage or a connection failure – does not ensure that the system will remain effective at all times and it should not be considered to improve the integrity of cables during a fire condition.

The recommended cables for particular functions are detailed below:

A. CABLES PERMISSIBLE IF OPERATION IS REQUIRED TO CONTINUE AFTER CABLE IS ATTACKED BY FIRE. E. G. POWER SUPPLY, ALARM SOUNDER, CONTROL AND INDICATING EQUIPMENT.

A1. M. I. C. C. to BS6207: Part 1 with or without a PVC sheath. Cables for operating in damp, corrosive or underground situations should be PVC sheathed overall.

A2. PVC insulated non-sheathed cable to BS6004 provided it is protected by a conduit or trunking.

A3. PVC insulated and sheathed cable to BS6004 provided it is protected by a conduit or trunking.

A4. General purpose elastomer-insulated textile braided and compounded cable to BS6007 provided it is protected by a conduit or trunking.

B. CABLES PERMISSIBLE WHERE PROLONGED OPERATION DURING A FIRE IS NOT REQUIRED E.G. TRIGGER DEVICES, DOOR HOLDER CIRCUITS.

B1. M. I. C. C. to BS6007 as item A1.

B2. PVC insulated non-sheathed cable to BS6004 as item A2.

B3. PVC insulated and sheathed cable to BS6004 provided it is protected in a conduit or trunking against mechanical damage or damage by rodents and in all cases where it is installed less than 2.25m above floor level. Elsewhere this cable can be surface laid without protection provided it forms part of a monitored circuit.

B4. General purpose elastomer-insulated textile braided and compounded cable to BS6007 as item A4.

B5. Polythene insulated PVC sheathed coaxical cable to BS2316 provided it is used only for monitored call points or detector circuits and is protected as for item B3.

B6. PVC insulated cable complying with the requirements of types BK, BR & BU of BS6231 provided they are protected by a conduit or trunking and have a cross sectional area of not less than $1mm^2$.

B7. Alternative types of cable may be used providing it can be shown that, in the application in which they are to be used, the following apply:-

i. Their resistance to heat and fire is not less than that of the types described in sections A and B.

ii. Their resistance to ambient conditions, including mechanical impact and abrasion is not less than that of the types described in sections A and B.

iii. They are not prone to failure due to faulty assembly or installation. Cables designed for the detection of heat may be used for the interconnection of detectors within a zone, notwithstanding the other recommendations in sections A and B.

2.0 Armoured Cables

i. Armoured Cables with PVC insulated and sheathed conductors may be used where the wire armour and sheathing complies as far as possible with PS6346. Cables complying with BS5467 may also be used.

ii. In locations where ambient temperatures exclude the use of cables to BS6889 for 60^0C rubber or BS6746 for 70^0C PVC, heat resisting rubber or PVC cable should be used such as:-

a) Rubber insulated cable to BS6007, cables 1, 4, or 5 1975.

b) PVC cable to BS6004 but having type 4 or 5 insulation complying with BS6746.

3.0 Conductor Sizes

i. In selecting conductor sizes due regard must be paid to the limitations imposed by voltage drop since this is extremely important when voltages of the order of 24 volts are being used.

ii. Consideration should be given to the physical strength of conductors. Minimum recommended sizes are $1mm^2$ or if considered stranded $0.5mm^2$.

B. INSTALLATION OF CABLES

The installation of fire alarm system cabling should be generally in accordance with the IEE wiring regulations. Whilst the parts of the fire alarm system not directly connected to the mains supply are specifically excluded from these regulations the general principles of goods practice outline in the IEE regulations should be followed. Cables should be routed as far as possible in protected areas of low fire risk but where this is impossible, consideration should be given to the effects of fire exposure on the type of cable used. All conduits, ducts, channels or trunking used for fire alarm cables must be reserved exclusively for this purpose and under no circumstances must cables or other services be included unless they are separated by a mechanically strong, rigid and continuous partition of non combustible material. Where separation is not possible the fire alarm circuit should be wired in M. I. C. C. cable.

Fire alarm circuits should not be contained in a multi-core cable, flexible cable or flexible cord with other circuits of lower or higher voltage.

Ducts, channels or trunking reserved exclusively for fire alarm circuits should be marked and the cables should be completely enclosed when the covers are in place. Where structural accommodation has to be provided, careful consideration should be given at an early stage to the size and layout of ducts, chases etc, so that these may provide for future additions or modifications as far as these could be foreseen.

Where multi-core cables are used, consideration should be given to the installation of a cable with spare conductors. Where vertical ducts are employed these should be continuous throughout the height of a multi-storey building and allow for convenient lateral distribution on each floor.
Fire alarm cables, ducts and trunking should not be run in flue-like openings which are a potential fire hazard.

Cables laid in cavities and voids (e.g. under floor voids) may be treated as surface laid cables with the provision that they be separated from the cables of other services by at least 300mm.

Where cables, conduits, ducts, channels or trunking pass through floors, walls, partitions or ceilings the thickness of the floor, wall etc. should be made good with fire stopping material. In addition where cables, conduits or conductors are installed in channels, ducts, trunking or shafts that pass through floors, walls, partitions or ceilings, internal barriers of suitable fire resistant performance should be provided to prevent the spread of fire.
The normal considerations of good practice should be given to surface fixing taken through walls by the use of smooth bore sleeves and the same consideration should extend as far above the floor level as is
necessary to provide protection for the cable and in any case should not be less than 300mm.

Where cables pass through outside walls, a smooth bore sleeve of non-hygroscopic material should be sealed into the wall sloping downwards towards the outside and should be plugged with a non-hardening waterproof compound to prevent the entry of rain etc.

Where joints in cables are unavoidable the joints should be enclosed in a suitable junction box labelled 'Fire Alarm' and the joint should not be such as to reduce the reliability and resistance to fire of the cable below that of an unjoined cable.

Where surface boxes are likely to be subject to unauthorized interference, the boxes should not be pre-drilled or of the type incorporating 'knock out' cable entries.

C. CONDUITS, DUCTS, CHANNELS, TRUNKING & SEGREGATION OF WIRING

Conduits and ducts should be adequate for the numbers and size of cables bearing in mind the need to allow space for possible future extension. Metallic trunking or conduit should be of a type that will ensure electrical earth continuity and mechanical rigidity throughout.

Cable ducts or trunking should preferably be of metal construction. A British Standard for non-metallic ducts or trunking is, at the time of going to press in the course of preparation. Until finalised this type of duct or trunking should only be used after agreement with all the interested parties and the deviation noted on the installation and commissioning certificate.
Screwed metal or rigid PVC conduit may be used but the latter should conform to type A or B of BS4607: Part 1 and should not be used where the ambient temperature is likely to exceed 60°C. Where type A and B rigid PVC is used, suitable measures should be taken to avoid mechanical damage when temperatures fall below 5°C and 25°C respectively. Additional protection should also be provided where PVC conduit or non-metallic ducts or trunking is likely to suffer mechanical damage. Alternative conduits, ducts or trunking may be used providing their resistance to heat, fire, mechanical damage and ambient conditions is not less than that of those previously described and they are not prone to failure due to faulty assembly or installation. All terminations should be carried out under the control of a qualified person and it is recommended that the installation should be under the control of a person with at least 'approved electrician' status.

D. INITIAL TESTING, INSPECTION, COMMISSIONING & MAINTENANCE

The Installer is required to issue a certificate which specifies that the system complies with the recommendations of the British Standard Code of Practice and where deviations exist they must be stated by the installer.

Initial testing of cables should be carried out to ensure that they comply with the IEE regulations. This consists of a 500 volt d.c. test for insulation resistance between each conductor and earth and between conductors, which should not be less than 1 megohm. This test will damage items of equipment incorporating electronic components and for this reason should be carried out with **all equipment disconnected.** Where M.I.C.C. cable is used this test should be carried out after the seals have
been fitted and each section of the wiring is consequently tested. Earth continuity and earth loop impedance should also be tested to ensure compliance with IEE regulations. This is of course normal practice for wiring connected to the main supply.

Once the installation has been completed and all equipment connected, a 500 volt d.c. insulation test cannot be conducted and the code therefore makes provision for testing at a voltage recommended by the manufacturer. Voltages in excess of the normal operating voltage, usually 24 volts d.c. cannot be used and therefore earth insulation resistance should be checked by a voltmeter connected between a good earth and each pole of the system battery in turn. Any deflection will indicate faulty earth Insulation resistance and the part of the system responsible for this condition must be isolated, rectified and retested with a 500 volt d.c, test subsequent to being reconnected to the main system.

1.0 Commissioning Test

This work should be conducted by a representative of the manufacturer since it is vitally important that the commissioning engineer is aware of the detailed requirements of the British Standard Code of Practice. Most manufacturers provide this facility for which a fee is charged and Gent Ltd have trained commissioning engineers operating from regional offices throughout the United Kingdom.

The functional commissioning test consists of the following:-

a) Checking that the alarm devices comply with the Code recommendations and ensuring by use of a sound level meter that a minimum of either 65 dB, or 5 dB above any background noise likely to persist for a period longer than 30 seconds - whichever is the greatest - is produced by the sounders at any occupiable point in the building. Where the fire routine for the premises requires the audible alarm to arouse sleeping persons then a minimum sound level of 75 dB should be available at the bed head with all doors shut.

b) Checking that all trigger and alarm points function correctly. This will require the injection of smoke into smoke detectors and the checking of heat detectors (other than the fusible link type) and the checking of manual call points.

c) Checking that all ancillary equipment such as door holder circuits, ventilating plant shutdown equipment functions correctly.

It should be noted that connections to a Fire Brigade or Manned Centre should never be established until the complete system has been satisfactorily commissioned by a competent commissioning engineer. This is to prevent unwanted alarms being transmitted to the Fire Authority.

2.0 Certification

It is the installers responsibility to certify that the system complies with the British Standard Code of Practice recommendations. On completion of a satisfactory commissioning test by the manufacturer under Clause 26.4 of the Standard, a certificate will be issued to the installer and it is the installers responsibility to certify that the installation complies with the recommendations of the Code under Clause 26.5 Any deviations from the Code must be given by the Installer.

It is recommended that the final installation and commissioning certificate covers the following Sub-Clauses under 26 of the Code of Practice.

a) Sub-Clause 26.1 - the installations have been inspected for compliance with the recommendations of the Code.

b) Sub-Clause 26.2 - that the insulation of the cables has been tested.

c) Sub-Clause 26.3 - that the earthing requirement has been tested.

d) Sub-Clause 26.4 - that the entire system has been functionally tested for satisfactory operation.

e) Sub-Clause 26-5 - that the installation complies with the recommendations of the Code other than detailed deviations.

It is also recommended under Sub-Clause 26.1 that record drawings and operating instructions are supplied by the Installer to the end user. The certificate should contain the name and address of the protected premises and be signed on behalf of the Installer. To amplify the foregoing we reproduce overleaf, with the consent of the British Standards Institution, section 26 of the Code together with a Model Certificate (i.e. Appendix B).

Clause 26 of BS5839: Part 1:1980

26. Inspection, initial testing and commissioning of Systems.

26.1 Inspection of installation. The complete installation should be inspected to ensure that the work has been carried out in a satisfactory manner and that the methods, materials and components used conform with the recommendations of this code, and that the record drawings and operating instructions called for in 4.6 have been supplied, The installer should certify that the installation complies with the recommendations to this code of practice. (See appendix B.)

26.2 Insulation of cables and wires. Insulation testing of installed cables and wires should be made at 500V
d.c. and the insulation resistance to earth and between conductors of the installed cables and wires should be in accordance with the Regulations for the electrical equipment of buildings published by the Institution of Electrical Engineers. Tests that may damage items of equipment, especially apparatus incorporating electronic circuits, should be carried out with the equipment disconnected- If access to the equipment would be difficult after final installation, then the separate parts of the circuits may be tested during installation, but the complete circuit should then be tested at a voltage recommended by the manufacturer.

26.3 Earthing. Earth continuity and earth loop impedence should be tested to ensure compliance with the
requirements of the Regulations for the electrical equipment of buildings published by the Institution of Electrical Engineers.

26.4 Commissioning Test. The entire system should be tested to ensure that it operates satisfactorily and that:
a) The alarm devices comply with the recommendations of clause 9.
b) All trigger devices and alarm points function correctly.
c) All ancillary equipment functions correctly.
d) Any connection to a fire brigade or commercial centre operates correctly.

26.5 Certification. The installer should certify that the installation complies with the recommendations of this code of practice, or. If deviations exist, a statement of these deviations should be given by the Installer. (See appendix B).

3.0 Maintenance

After the completion of the commissioning test and certification it is the users responsibility to ensure that the system is properly maintained.

It is advisable that users enter into a routine maintenance agreement offered by manufacturers. Further details on servicing & maintenance can be found in the Section entitled “User Involvement”.

PARTICULAR PLUMBING AND DRAINAGE SPECIFICATION

SCOPE

These specifications cover the execution of plumbing and drainage installation at the mentioned site to be supervised by the Engineer or his representative and the sub-contractor should read them in conjunction with other relevant specifications, drawings and contract documents issued to the sub-contractor for the works.

The works include, unless otherwise specified, installations, testing, commissioning and setting to work all the installations described in the specifications and shown on contract/working drawings.

The provision of all labour, tools, instruments, testing apparatus and scaffolding necessary to execute the work in a first class manner and all other implement and material not specifically mentioned in the project or contract documents but are necessary for the satisfactory completion of the works, including such elements as;-

a) Cold water supply pipework and fittings to the water storage tanks from the existing water mains.

b) Water storage tanks complete with all covers, fittings, washout, drain and overflow pipes, backnuts, supports etc. The overflow, washout and drain pipes shall terminate away at reasonable discharge points are required.

c) The Water storage supply pipework to the functional and sanitary fittings as shown plus the necessary fixing supporting and jointing materials or compounds.

d) The sanitary and operational fittings including all accessories together with the fixing, mountings, supports and jointing to the supply and discharge pipes.

e) Electrical wiring in plant rooms from isolator and all control wiring including cables, conduits, pipes etc from central facilities to working area.

WELDING

Joints to be made by welding shall be accurately cut to size with edges sheared, flame cut and machined to suit the required type of joint. The prepared surface shall be free from all visible defects such as laminations, surface imperfections due to shearing or flame cutting operation etc, and shall be free from rust scale, grease and other foreign matter.

All welding shall be carried out by electrical process using covered electrodes in accordance with B.S. 639.

Gas welding may be employed in certain circumstances provided that prior approval is obtained in writing from the Engineer.

All pipe weld shall be carried out in accordance with the requirements of BS 806.

All welding of mild steel components other than pipework shall comply with the general requirement of BS 1856.

ELECTRICAL REQUIREMENTS

Plant and equipment supplied under this sub-contract be complete with all necessary motor starters, control boards, and other control apparatus. Where control panels incorporating several starters are supplied, they shall be complete with main isolator. The supply power up to and including local isolator will be provided and installed by the Electrical sub-contractor. All other wiring shall be installed as described by the sub-contractor.

The starting current of all electric motors and equipment shall not exceed the maximum permissible starting current as described in the Kenya Power and Lighting Company By-Laws.

All electrical plant and equipment supplied by the sub-contractor shall be rated for the supply voltage and frequency obtained in Kenya, that is 415 volt, 50Hz, 3-phase or 240 volts, 50Hz, 1-phase as specified.

All equipment or plant that is not rated for the above currents, voltages and frequencies shall be rejected by the Engineer.

The sub-contractor shall supply three copies of all schematic, cabling and wiring diagrams for the Engineer's approval before commencement of works.

COLOUR CODING

When all installations have been set to work, tested and commissioned the sub-contractor shall prime all the works with an undercoat and then give the same two coats of gloss paint in accordance with the latest edition of BS 1710 on colour and to the satisfaction of the Engineer.

MATERIALS AND STANDARDS

Pipework and Fittings

a) Black Steel Pipework

All black steel pipework upto 65mm nominal bore shall be manufactured in accordance with B.S. 21. All fittings shall be of malleable iron and manufactured in accordance with B.S. 143.

Pipe joints shall be screwed and socketed and sufficient couplings and unions shall be allowed so that fittings can be disconnected without cutting the pipe. Running

nipples and long screws shall not be permitted unless exceptionally approved by the Engineer.

All black steel pipework, 80mm nominal bore upto 150mm nominal bore, shall be manufactured to comply in all respects with the specification for 65mm pipe, except that screwed and bolted flanges shall replace unions and couplings for the jointing of pipes to valves and other items of plant.

All flanges shall comply with the requirements of B.S. 10 to the relevant classifications contained hereinafter section C of the Specifications.

b) Galvanized Steel Pipework

Galvanized steel pipework shall be manufactured to comply in all respects with the standards described for black steel pipework in paragraph (a) above.

Galvanizing shall be carried out in accordance with the requirements of B.S. 1387 and BS 143 respectively.

CPVC & PPR & HDPE pipes and fittings please refer to manufactures printed manuals.

a) Copper Tubing

All copper tubing shall be manufactured in accordance with B.S. 2871 from C160 'Phosphorus De-oxidized Non-Arsennical copper' in accordance with B.S. 1172.

Pipe joints shall be made with soldered capillary fittings and connections to equipment shall be compression fittings manufactured in accordance with B.S. 864.

Short copper connections tubes between galvanized pipework and sanitary fittings shall not be used because of the risk of galvanic action.

If, as may occur in certain circumstances, it is not possible to make the connections in any other way than by the use of copper tubing, then a brass straight connector shall be positioned between the galvanized pipe and the copper tube in order to prevent direct contact.

d) Cast Iron Pipework

i) Internal iron pipework and fittings for use above ground in connection with internal building services shall be manufactured with spigot and socket joints of the weight required by the Local Authority and shall comply fully with the requirements of B.S. 416.

All joints on cast spigot and socket pipes shall be made with an approved cold caulking compound and so installed as to allow for any expansion or contraction that may take place.

All cast iron pipework, branches, tees, bends and other fittings shall be supplied complete with inspection covers for cleaning purposes. These inspection covers shall be included as part of the fittings and shall comply with the requirements of B.S. 416.

ii) External Services

Cast iron pipework which is used in accordance with buried external services shall be manufactured, coated and tested in accordance with the requirements of B.S. 1211.

All buried cast iron bends, elbows, sweep tees and other fittings, shall comply with the requirements of B.S. 1130.
Jointing on external cast iron pipes shall be carried out in accordance with one of the methods described in B.S. Code of Practice 301, Clause 505c(v), to the approval of the Engineer.

e) Pitch Fibre Pipework

Pitch Fibre Pipework and fittings are used in connection with external drainage services shall be manufactured in accordance with the requirements of B.S. 2760. Pipes shall be connected by means of purpose made tapered joints manufactured in accordance with B.S. 2760.

Until such time as the use of pitch impregnated fibre pipes is covered by a code of Practice, the jointing laying and cutting of these pipes shall be carried out in accordance with the requirements of the notes contained under Appendix C of B.S. 2760.

f) Concrete Pipe

Where concrete pipe and fittings are used in connection with the conveyance of surface water or sewage under atmosphere pressure, they shall be manufactured in accordance with the requirements of B.S. 556, Clause 1, except where otherwise stated.

The joints of concrete pipe and fittings may be one of the following depending upon application and conditions;-

(i) Flexible spigot and socket type
(ii) Flexible rebated type (Stormwater drainage only)
(iii) Ordinary spigot and socket type
(iv) Ordinary rebated type (Stormwater drainage only)

Joints (i) and (ii) shall be sealed with suitable rubber gaskets manufactured in accordance with B.S 2494 except where they are likely to be contaminated by oil products, in which case the gaskets shall be manufactured in accordance with B.S. 3514.

Joints (iii) and (iv) shall be made with an approved cement mortar mix.

g) Asbestos Cement Pressure Pipes

Where asbestos cement pressure pipe and fittings are used in connection with external, above ground or buried water services, they shall be manufactured in accordance with the requirements of B.S. 486.

The classification of these pipes falls into four classes;-

A,B,C and D respectively, and the class to be used shall depend upon the pressure conditions pertaining at site.

Where cast iron detachable joints are used for connecting pipes, the material shall comply with B.S. Specifications, then the materials used shall be of a quality not less than that required by this standard.

Rubber jointing rings shall be used for sealing purposes and shall comply with the requirements of B.S. 2494, except where they are likely to be contaminated by oil products, in which case the gaskets shall be manufactured in accordance with B.S. 3514.

h) P.V.C. (Hard) Pressure Pipe and Fittings

All P.V.C. pipes and fittings shall be manufactured in accordance with B.S. 3505:

i) Jointing

The method of jointing to be employed shall be that of Solvent welding, using the pipe and manufacturer's approved cement Seal rings joints shall be introduced where it is necessary to accommodate thermal expansion.

j) Anchoring

All bends, valves and hydrant tees etc, in the line of the water main shall be adequately anchored to resist thrust due to internal water pressure. A concrete block shall be cast under and around the pipe and between it and sides of the trench. Well-rammed material shall be used to support the pipe on either sides of the concrete.

k) Pipe Bed

Pipes shall be uniformly laid on a 75mm thick bed (sand or red soil) and must not be allowed to rest on the joint or on stones etc.

l) Support to Fittings

In underground installations care shall be taken to ensure that heavy components such as valves are fully supported so that no weight is carried by the pipeline.

m) Backfilling

For the protection of the pipe initial backfilling shall be carried out as soon as possible after laying. The initial backfill shall be fine grained material thoroughly compacted around the pipe and consolidated to a depth of 6" above the crown of the pipe at no time shall heavy rocks, stones or other objects be included in the balance of the backfill that might protrude the initial backfill layer and come into contact with the pipe.

n) Testing

Pipelines shall be tested in sections under an internal water pressure normally one and a half times the maximum allowable working pressure for the class of pipe used. Testing shall be carried out as soon as practicable after laying and when the pipeline is adequately anchored. Precautions shall be taken to eliminate all air from the test section and to fill the pipeline slowly to avoid risk of damage due to surge.

(i) A.B.S. Waste System

Where indicated on the drawings and schedules, the Sub-Contractor shall supply and fix A.B.S. waste pipes and fittings.

The pipes, traps and fittings shall be in accordance with the relevant Standards including B.S. 3943, and fixed generally in accordance with manufacturer’s instructions and B.S 5572.

Jointing of pipes shall be carried out by means of solvent welding. The manufacturer's recommended method of joint preparation and fixing shall be followed.

Standard brackets, as supplied for use with this system, shall be used wherever possible. Where the building structure renders this impracticable, the Sub-Contractor shall provide purpose made supports, the centres of which shall not exceed one metre.

Expansion joints shall be provided as indicated. Supporting brackets and pipe clips shall be fixed on each side of these joints.

(ii) P.V.C. Soil System

The sub-contractor shall supply and fix P.V.C. soil pipe and fittings as indicated on the drawings and schedules.

Pipes and fittings shall be in accordance with relevant Standards, including B.S. 4514 and fixed to the manufacturer's instructions, and B.S. 5572.

The soil system shall incorporate synthetic rubber gaskets as provided by the manufacturer whose fixing instructions shall be strictly adhered to.

Connections to W.C. and pass shall be effected by the use of a W.C. connector gasket and cover, sized to suit pan socket.

Suitable supporting brackets and pipe clips shall be provided at maximum of metre centres.

The sub-contractor shall be responsible for the joint into the Gulley Trap on Drain as indicated on the drawings.

VALVES

a) Draw-off Taps and Stop Valves (upto 50mm Nominal Bore)

Draw off taps and valves upto 50mm nominal bore, unless otherwise stated or specified for attachment or connection to sanitary fittings shall be manufactured in accordance with the requirements of B.S.1010.

b) Gate Valves

All gate valves upto 80mm nominal bore and above, other than those required for fitting to buried water mains shall be of cast iron construction, in accordance with the requirements of B.S. 3464. All gate valves required for fittings to buried water mains shall be of cast iron construction in accordance with the requirements of B.S. 1218.

All gate valves upto and including 65mm nominal bore shall be of bronze construction in accordance with the requirements of B.S. 1952.

The pressure classification of all gate valves shall depend upon the pressure conditions pertaining to the Site of Works.

c) Globe Valves

All globe valves upto and including 65mm nominal bore shall be of bronze construction in accordance with the requirements of B.S. 3061.

The pressure classification of all globe valves shall depend upon the pressure conditions pertaining to the Site of Works.

d) Check or Non-Return Valves

All check or non-return valves 80mm nominal bore and above shall be of the swing check type of cast iron construction in accordance with the requirements of B.S. 4090.

The pressure classification of all check or non-return valves shall depend upon the pressure conditions pertaining to site of the Works.

e) Ball Valves

All ball valves for use in connection with hot and cold water services shall be of the Portsmouth type in accordance with the requirements of B.S. 1212, constructed from bronze or other corrosion resistant materials. These valves fall into three pressure classifications as follows;-

i)	Low pressure	-	3.58 b maximum
ii)	Medium pressure	-	7,72 b maximum
iii)	High pressure	-	12.62 b maximum

The pressure classification required for each ball valve will be designated in the description its associated equipment contained in section C of the Specification.

f) Manually Operated Mixing Valves

Mixing valves for shower fittings and other appliance being provided under the Sub-Contract. Works shall be manufactured in accordance with the requirements of B.S. 1415 from bronze or other corrosion resistant materials.

WASTE FITMENT TRAPS

a) Standard and Deep Seal P & S Traps

Where standard or deep seal traps are specified they shall be manufactured in suitable non-ferrous materials in accordance with the full requirements of B.S. 1184.
In certain circumstances, cast iron traps may be required for cast iron baths and in these instances bath traps shall be provided which are manufactured in accordance with the full requirements of BS. 1291

b) Anti-Syphon Traps

Where anti-syphon traps are specified, these shall be similar or equal to the range of traps manufactured by Greenwood and Hughes Limited, Deacon Works Littlehampton, Sussex, England.
The trade name for traps manufactured by this company is "Grevak"

PIPE SUPPORTS

a) General

This sub-clause deals with pipe supports securing pipes to the structure of buildings for above ground application.

The variety and type of support shall be kept to a maximum and their design shall be such as to facilitate quick and secure fixings to metal, concrete, masonry or wood.

Consideration shall be given, when designing supports, to the maintenance of desired pipe falls and the restraining of pipe movements to a longitudinal axial direction only.

The Sub-Contractor shall install all steelwork forming part of the pipe support assemblies.
The sub-contractor shall submit all his proposals for pipe supports to the Engineer for approval before any erection work commences.

b) Steel and Copper Pipes and Tubes

Pipe runs shall be secured by pipe clips connected to pipe hangers, wall brackets, or trapeze type supports. 'U' bolts shall not be used as a substitute for pipe clips without the prior approval of the Engineer.

An approximate guide to the maximum permissible supports spacing in metres for steel and copper pipe and tube is given in the following table for horizontal runs.

Size Nominal Bores	Copper Tube to B.S. 659	Steel Tube to B.S. 1387
15mm	1.25m	2.0m
20mm	2.0m	2.5m
25mm	2.0m	2.5m
32mm	2.5m	3.0m
40mm	2.5m	3.0m
50mm	2.5m	3.0m
65mm	3.0m	3.5m
80mm	3.0m	3.5m
100mm	3.0m	4.0m
125mm	3.0m	4.5m
150mm	3.5m	4.5m

The support spacing for vertical runs shall not exceed one and half times the distances given for horizontal runs.

c) Cast Iron and Asbestos Cement Spigot and Socket Jointed Pipes

Cast iron and asbestos cement socketed pipes shall generally be supported at every socket joint by means of either holderbats secured rigidly to the structure, or purpose made straps for attachment to rigid steel support brackets.
When holderbats are used, they shall conform to the requirement of B.S.416.

Suitable anchors shall be provided at all changes of pipe directions, junctions and tees, to counteract the effect of end thrust loads.

(d) Asbestos Cement Pressure Pipes

Asbestos Cement pressure pipes with either cast iron detachable joints or asbestos cement screw joints shall be supported and anchored on either side of the joint.

Pipe hangers trapeze type supports shall not be suitable for the suspension of asbestos pressure pipes unless they are designed with suitable restrictions to prevent swinging while at the same time providing the necessary support requirements.

Within the building, asbestos pressure pipe shall be carried either on concrete supports or on rigidly fixed steel wall brackets.

Suitable anchors shall be provided at all changes of pipe directions, junctions and tees to counteract the effect of end thrust loads.

(e) Concrete and Pitch Fibre Pipes

These pipes shall not be used for above ground application.

(f) Expansion Joints and Anchors

Where practicable, cold pipework systems shall be arranged with sufficient bends and changes of direction to absorb pipe expansion provided that the pipe stresses are contained within the working limits prescribed in the relevant B.S. specification.

The Sub-Contractor shall pay particular care when supporting cast iron and asbestos cement pipes in order to ensure that settlement and building movement do not break the pipe joints.

Where piping anchors are supplied, they shall be fixed to the main structure only Details of all anchor design proposals shall be submitted to the Engineer for approval before erection commences.

The Sub-Contractor when arranging his piping shall ensure that no expansion movements are transmitted directly to connections and flanges on pumps or other items of plant.

The Sub-Contractor shall install flexible joints to prevent vibrations and other movements being transmitted from pumps to piping systems or vice versa.

SANITARY APPLIANCES

All sanitary appliances supplied and installed as part of the Sub-Contract works shall comply with the general requirements of B.S. specifications.

PIPE SLEEVES

Main runs of pipe work are to be fitted with sleeves where they pass through walls and floors. Generally the sleeves shall be of P.V.C. except where they pass through the structure, where they shall be mild steel. The sleeves shall have 6 mm - 12 mm clearance of all round the pipe or for insulated pipework all around the installation. The sleeve will then be packed with slag wool or similar.

INSTALLATION

GENERAL

Installation of all pipework, valves, fittings and equipment shall be carried out under adequate supervision from skilled staff to the relevant codes and standards as specified herein. The Sub-Contractor shall be responsible to the Main Contractor for ensuring that all builders' work associated with his piping installation is carried out in a satisfactory manner to the approval of the Engineer.

ABOVE GROUND INSTALLATION

(a) Water Services

Before any joint is made, the pipes shall be hung in their supports and adjusted to ensure that the joining faces are parallel and any falls which shall be required are achieved without springing the pipe.

Where falls are not shown on the Contract Drawings or stated elsewhere in the Specification, pipework shall be installed to the lines of buildings and as close to the walls, ceiling, columns, etc, as is practicable.

All water systems shall be provided with sufficient drain points and automatic air vents to enable them to function correctly. Valves and other user equipment shall be installed with adequate access for operation and maintenance. Where valves and other operational equipment are unavoidably installed beyond normal reach or in such position as to be difficult to reach from a short stepladder, extension spindles with floor or wall pedestals shall be provided.

Screwed piping shall be installed with a sufficient number of unions to facilitate easy removal of valves and fittings and to enable alterations of pipework to be carried out without the need to cut the pipe.

Full allowance shall be made for the expansion and contraction of pipework, precautions being taken to ensure that any force produced by pipe movements are not transmitted to valves, equipment or plant.

All screwed joints to piping and fittings shall be made with P.T.F.E. Tape.

The test pressure shall be maintained by the pump for about one hour and if there is any leakage, it shall be measured by the extension of water pumped into the main in that time. A general leakage

of one gallon per 25mm of diameter, per 1.6 kilometer per 24 hours per 30 metres head, may be considered reasonable but any visible individual leak shall be repaired.

(b) Sanitary Services

Soil, waste and vent pipe systems shall be installed in accordance with the best standards of modern practice as described in B.S.5572 to the approval of the Engineer.

The Sub-Contractor shall be responsible for ensuring that all ground floor waste fittings are discharged to a gully trap before passing to the sewer via a manhole.

The Sub-Contractor shall provide all necessary rodding and inspection facilities within the draining system in position where easy accessibility is available. WCs shall not fall under this requirement.

Where a branch requires rodding facilities in a position to which normal access is unobtainable, then that branch shall be extended so as to provide a suitable purpose made rodding eye in the nearest adjacent wall or floor to which easy access is available.

The vent stacks shall terminate above roof level and where stack passes through roof weather skirt shall be provided. The Sub-Contractor shall be responsible for sealing the roof after installation of the stacks.

The open end of each stack shall be fitted with a plastic coated or galvanised steel, wire guard.

Access for rodding and testing shall be provided at the foot of each stack.

(c) Sanitary Appliances

All sanitary appliances associated with the Sub-Contract works shall be installed in accordance with the best standard of modern practice as described in B.S.5572 to the approval of the Engineer

UNDERGROUND INSTALLATION

(a) General

All underground water and drainage service installations shall be carried out in accordance with the best standard of modern practice as described in C.P.301 and C.P.310 respectively and the following clause.

(b) Sequence of Operation for Underground Service Installation

(i) Setting out

As described in B.S. code of practice 301 Clause 502.

(ii) Breaking Up Surface (If in Roads)

As described in B.S. code of practice 301 Clause 503.

(iii) Excavation and Timbering

As described in B.S. code of practice 301 Clause 503 and the following:-

Excavation shall be made to such depths and dimensions as may be required by the Engineer to obtain prior falls and firm foundations. No permanent construction shall be commenced on any bottom until the excavation has been examined and approved by the Engineer.
Should the Sub-Contractor err or without the instruction of the Engineer make any excavation below the required level of the pipe or bed, as the case may be, then he shall be required to refill such excavation to the correct levels with concrete 1:4:8 to 38mm maximum aggregate size.

No sub-soil water shall be discharged into the sewage systems without written permission of the Engineer.

(iv) Laying of Concrete Beds or other Supports for Pipes (If required)

As described in B.S. code of practice 301 Clause 504 and the following:-

All drains below buildings shall be encased in concrete 150mm thick.
Concrete beds and supports shall be concrete 1:3:6 to 25mm maximum aggregate size.

(v) Pipe Laying and Joining

Drain pipes be laid and jointed as described under B.S. code of practice 301 Clause 505.
Pitched fibre drain pipe shall be laid, jointed and cut in accordance with the requirements or the Note contained under Appendix C of B.S.2760.

Water pipes shall be laid and jointed as described under B.S. code of practice 310, clause 401, 402, 403 and 404.

(vi) Testing of Pipelines

After pipelines are connected and joints have been sealed, the pipeline shall be tested before pipes are, if required, haunched or surrounded in concrete.

Methods of testing and inspection shall be in accordance with Clause 4 of the Specification.

(vii) Concrete Beddings, Haunching and Surround

Concrete bedding, haunching and surround shall be provided as necessary or where called for by the Engineer in accordance with the requirements laid down in B.S. code of practice 301, Clause 310.

(viii) Backfilling

Backfilling of trenches, headings and around manholes shall be carried out in accordance with the methods described in B.S. code of practice 301, Clause 508.

(ix) Reinstatement of Surfaces

Following the final backfilling of all trenches, headings and manhole surrounds, the surface of the excavated areas shall be fully reinstated to the approval of the Engineer.

TESTING AND INSPECTION

SITE TEST - PIPEWORK SYSTEMS

a) Underground Water Mains

After laying, jointing and anchoring, the mains shall be slowly and carefully charged with water so that all air is expelled and allowed to stand full for three days before testing under pressure.

A long main shall be tested in sections as the work of laying proceeds and all joints shall be exposed for inspection during the testing.

The open end of the main may be temporarily closed for testing under moderate pressure by fitting a water pipe expanding plug, of which several types are available. The end of the main and the plug should be secured by struts or otherwise, to resist the end thrust of the water pressure in the main.

If the section of main terminates with a sluice valve, the wedge of the valve shall not be used to retain the water, instead the valve shall be fitted temporarily with a blank flange, or a socket valve with a plug and the wedge shall be placed in the open position while testing. The Sub-Contractor shall provide suitable end supports to withstand the end thrust of the water pressure in the main.

b) Above Ground Internal Water Services Installation

All water service pipe system installed above ground shall be tested hydraulically for a period of one hour to not less than one and half times the design working pressure.

If preferred, the Sub-Contractor may test the Pipelines in sections. Any such section found to be satisfactory need not be the subject of a further test when system has been completed, unless specifically requested by the Engineer.

During the test, each branch and joint shall be examined carefully for leaks and any defects revealed shall be made good by the Sub-Contractor and the section re-tested.

The Sub-Contractor shall take all necessary precautions to prevent damage occurring to special valves and fittings during the tests. Any item damaged shall be required or replaced at the Sub-Contractor's expenses.

c) Underground Drainage System

A site test shall be carried out on all drainage pipes before haunching or surrounds are applied. These tests shall be carried out preferably from manhole to manhole.

Short branch drains connected to a main drain between manholes shall be tested as one system with a main drain. In long branches, a testing junction shall be inserted next to the junction with the main drain and the branch tested separately. After this has been passed, the testing junction shall be effectively sealed.

All tests on underground drains shall be permitted on cast iron drains at the discretion and to the approval of the Engineer.

Water tests shall be carried out in accordance with the methods described under B.S. Code of Practice 301, Clause 601(b) and (c) and the test pressure shall not be less than 1,520mm head at the highest point in the pipe section and not more than 10.36mm head at any point in the section.

The test pressure shall be maintained for the period of one hour during which time the pipe and joints shall be inspected for sweating and leakage. Any leak discovered during the tests shall be made good by the Sub-Contractor and the section re-tested.

In addition to pressure tests, drain pipe runs shall be tested for straightness where applicable. This test shall be carried out in accordance with one of the two methods described in B.S. code of Practice 301, Clause 601(e).

Testing of manholes shall be carried out in accordance with the methods described under B.S. code of practice 301, clause 601 (f).

d) Above Ground Soil, Waste and Ventilation System

All soil, waste and ventilating pipe system forming part of the above ground installation, shall be given appropriate test procedures as described in B.S. 5572.

Smoke tests on above ground soil, waste and ventilating pipe system shall not be permitted.

Pressure tests shall be carried out before any work that is to be concealed is finally enclosed.

Any defects revealed by the tests shall be made good by the Sub-Contractor and the test repeated to the approval for the Engineer.

In all other respects, tests shall comply with the requirements of B.S. 5572.

SITE TEST - PERFORMANCE

Following satisfactory pressure test on the pipework systems, operational shall be carried out in accordance with the relevant B.S. code of practice on the systems as a whole to establish that special valves, gauges, controls, fittings, equipment and plant are functioning correctly to the satisfaction of the Engineer.

All hot water pipe work shall be installed with performed fibreglass lagging to a thickness of 25mm where the pipe runs above a false ceiling or in areas where the ambient temperature is higher than normal with the result that pipe "sweating" due to condensation will cause nuisance.

All lagged pipes which run a visible position after erection shall be given a canvas cover and prepared for a painting as follows;-

i) Apply a coating of a suitable filler until the canvas weave disappears and allow to dry

ii) Apply two undercoats of an approved paint and finish in suitable gloss enamel to colours approved by the Engineer.

All lagging for cold water and hot water pipes erected in crawl ways, ducts, and above false ceiling which, after erections are not visible from the corridors or rooms, shall be covered with a reinforced aluminum foil finish and banded in colours to be approved by the Engineer.

In all respects, unless otherwise stated, the hot and cold water installation shall be carried out in accordance with the best standard of modern practice as described in C.P. 342 and C.P. 310 respectively to the approval of the Engineer.

The test pressure shall be applied by means of a manually operated test pump or, in the case of long main or mains or large diameter, by a power driven test pump which shall not be left unattended. In either case precautions shall be taken to ensure that the required pressure is not exceeded.

Pressure gauges should be recalibrated before the tests.

STERILIZATION OF HOT AND COLD WATER SYSTEMS

All underground water mains and above ground water distribution systems, cisterns, tanks etc shall be thoroughly sterilized and flushed out after the completion of all tests and before fully commissioned for handing over.

The sterilization procedure shall be carried out by the sub-contractor or specialists employed by the sub-contractor in accordance with the requirements of B.S. code of practice 310, clause 409, to the approval of the engineer.

PARTICULAR SPECIFICATIONS FOR PORTABLE, FIRE EXTINGUISHER AND HOSE REEL INSTALLATIONS

GENERAL

The particular specification details the requirements for the supply and installation and commissioning of the Portable Fire Extinguishers and Boosted Hose Reel System. The contractor shall include for all appurtenances and appliances not necessarily called for in this specification or shown on the contract drawings but which are necessary for the completion and satisfactory functioning of the works.

If in the opinion of the contractor there is a difference between the requirements of the Specifications and the Contract Drawings, he shall clarify these differences with the Engineer before tendering.

SCOPE OF WORKS

The contractor shall supply, deliver, erect, test and commission all the portable fire extinguishers and Hose Reel which are called for in these Specifications and as shown on the Contract Drawings.

WATER/CO_2 EXTINGUISHERS

These shall be 9-litre water filled CO_2 cartridge operated portable fire extinguishers and shall comply with B.S. 1382: 1948 and to the requirements of B.S.4523: 1977. Unless manufactured with stainless steel, bodies shall have all internal surfaces completely coated with either a lead tin, lead alloy or zinc applied by hot dipping.
There shall be no visibly uncoated areas.

The extinguishers shall be clearly marked with the following:

a) Method of operation.

b) The words 'WATER TYPE' (GAS PRESSURE) in prominent letters.

c) Name and address of the manufacturer or responsible vendor.

d) The nominal charge of the liquid in imperial gallons and litres.

e) The liquid level to which the extinguisher is to be charged.

f) The year of manufacture.

g) A declaration to the effect that the extinguisher has been tested to a pressure of 24.1 bar (350 p.s.i.).

h) The number of British Standard 'B.S' 1382 or B.S. 5423: 1977.

PORTABLE CARBON DIOXIDE FIRE EXTINGUSHERS

These shall be portable carbon dioxide fire extinguishers and shall comply with B.S. 3326: 1960 and B.S. 5423: 1977.

The body of extinguisher shall be a seamless steel cylinder manufactured to one of the following British Standards; B.S. 401 or B.S. 1288.

The filling ratio shall comply with B.S. 5355 with valves fittings for compressed gas cylinders to B.S.341. Where a hose is fitted it shall be flexible and have a minimum working pressure of 206.85 bar (3000 p.s.i.). The hose is not to be under internal pressure until the extinguisher is operated.

The nozzle shall be manufactured of brass gunmetal, aluminium or stainless steel and may be fitted with a suitable valve for temporarily stopping the discharge if such means are not incorporated in the operating head.

The discharge horn shall be designed and constructed so as to direct the discharge and limit the entrainment of air. It shall be constructed of electrically non-conductive material.

The following markings shall be applied to the extinguishers:-

a) The words “Carbon Dioxide Fire Extinguisher” and to include the appropriate nominal gas content.

b) Method of operation.

c) The words “Re-charge immediately after use”.

d) Instructions for periodic checking.

e) The number of the British Standard B.S. 3326: 1960 or B.S. 5423.

f) The manufacturers name or identification markings

DRY CHEMICAL POWDER PORTABLE FIRE EXTINGUISHER

The portable dry powder fire extinguishers shall comply with BS3465: 1962 and BS 5423. The body shall be constructed to steel not less than the requirements of BS 1449 or aluminium to BS 1470 : 1972 and shall be suitably protected against corrosion.
The dry powder charge shall be not-toxic and retain it s free flowing properties under normal storage conditions. Any pressurizing agent used as an expellant shall be in dry state; in particular compressed air.

The discharge tube and gas tube if either is fitted shall be made of steel, brass, copper or other not less suitable material. Where a hose is provided it shall not exceed 1,060mm and shall be acid and alkali resistant. Provision shall be made for securing the nozzle when not in use.

The extinguisher shall be clearly marked with the following information

a) The word "Dry Powder Fire Extinguisher"

b) Method of operation in prominent letters.

c) The working pressure and the weight of the powder charge in Kilogramme.

d) Manufacturers name or identification mark

e) The words "RECHARGE AFTER USE" if rechargeable type.

f) Instructions to regularly check the weight of the pressure container (gas Cartridge) or inspect the pressure indicator on stored pressure types when fitted, and remedy any loss indicated by either.

g) The year of manufacture.

h) The Pressure to which the extinguisher was tested.

i) The number of this British Standard BS 3465 or BS 5423: 1977.

j) When appropriate complete instructions for charging the extinguisher shall be clearly marked on the extinguisher or otherwise be supplied with the refill.

AIR FOAM FIRE EXTINGUISHER

These shall be of 9 litres capacity complete with refills cartridges and wall fixing brackets and complying with B.S. 5423 with the following specifications:-

Cylinder: to B.S. 1449

Necking: to be 76mm outside diameter steel EN 3A $2^{3}/_{4}$ X 8TPI female thread.

Headcap: to be plastic moulding acetyl resin.

CO2 Cylinder: to be 75gm P.V.C coated.

Internal Finish: to be polythene lining on phosphate coating.

External finish: to be phosphated - One coat primer paint and one coat stove enamel B.S. 381 C.

BOOSTED HOSE REEL SYSTEM

General

The Particular Specification details the requirements for the supply, installation and commissioning of the hose reel installation. The hose reel installation shall comply in all respects to the requirements set out in C.O.P 5306 Part 1: 1976, B.S 5041 and B.S 5274. The System shall comprise of a pumped system.

Hose Reel Pumps

The fire hose reel pumps shall consist of a duplicate set of multi-line centrifugal pumps from approved manufacturers. The pumps shall be capable of delivering 138 litres/min at a running pressure of 2 bars at the level of top hose reel in the system

The pump casing shall be of cast iron construction with the impeller shaft of stainless steel with mechanical seal.

Control Panel

The control panel shall be constructed of mild steel 1.0mm thick sheet, be moisture, insect and rodent proof and shall be provided complete with circuit breakers and a wiring diagram enclosed in plastic laminate.

The pump shall be controlled by a flow switch therefore, the control panel shall include the following facilities:

(a) 'On' push button for setting the control panel to live.

(b) Green indicator light for indicating control panel live.

(c) Duty / Stand-by pump auto change over.

(d) Duty pump run green indicator light.

(e) Stand-by pump run green indicator light.

(f) Duty pump fail red indicator light.

(g) Stand-by pump fail red indicator light.

(h) Low water condition pump cut-out with red indicator light.

The pumps are to be protected by a low level cut-out switch to prevent dry pump run when low level water conditions occur in the water storage tank.

Hose Reel

The hose reel to the installation shall consist of a recessed, swing-type hose reel as Naffco or from other approved manufacturers.

The hose reel shall comply with B.S. 5274 : 1975 and B.S 3161 : 1970 and is to be installed to the requirements of C.P. 5306 Part 1: 1976.

The hose reel shall be supplied and installed complete with a first-aid non-kinking hose 30 metres long with a nylon spray / jet / shut-off nozzle fitted. A screw down chrome - plated globe valve to B.S 1010 to the inlet to the reel is to be supplied.

The heavy duty hosereel shall be model no. NF/50A automatic mounted on ground or wall equipped with special hose guide. Size of hose to be 25mm diameter with 50m hose

The orifice to the nozzle is to be not less than 4.8mm to maintain a minimum flow of 0.4 lit / sec to jet.

The hose reels shall be installed at 1.5 metres centre above the finished floor level in locations shown in the contract drawings.

Pipe Work

The pipe work for the hose reel installation shall be galvanised wrought steel tubing heavy grade Class C to B.S 1387: 1967 with pipe threads to B.S 21.

Pipe Fittings

The pipe fittings shall be wrought steel pipe fittings, welded or seamless fittings conforming to B.S. 1740 or malleable iron fittings to B.S 143.

All changes in direction will be with standard bends or long radius fittings. No elbows will be provide

Non-return Valves

The non-return valves up to and including 80mm diameter shall be to B.S. 5153 : 1974.

The valves shall be of cast iron construction with gunmetal seat and bronze hinge pin.

Gate Valves

The gate valves up to and including 80mm diameter shall be non-rising stem and wedge disc to B.S 5154: 1974 with screwed threads to B.S. 21 tapes thread

Sleeves

Where pipe work passes through walls, floors or ceilings, a sleeve shall be provided one diameter larger than the diameter of the pipe, the space between them to be packed with mineral wool, to the Engineer's approval.

Earthing

The hose reel installation shall be electrically earthed by a direct earth connection. The installation of the earthing shall be carried out by the Electrical contractor.

Finish Painting

Upon completion of testing and commissioning the hose reel installation, the pipe work shall be primed and finish painted with 2 No. coats of paints to the Engineer's requirements.

Testing and Commissioning

The hose reel installation shall be flushed out before testing to ensure that no builder's debris has entered the system. The installation is to be then tested to one and half times the working pressure of the installation to the approval of the Engineer. Simulated fault conditions of the pumping equipment are to be carried out before acceptance of the System by the Engineer.

Instruction Period

The contractor shall allow in his contract sum for instructing of the use of the equipment to the Client's maintenance staff. The period of instruction may be within the contract period but may also be required after the contract period has expired.

The period of time required shall be stipulated by the Client but will not exceed two days in which time the Client's staff shall be instructed on the operation and maintenance of the equipment.

PARTICULAR SPECIFICATIONS FOR SPRINKLER AND WET HYDRANT FIRE FIGHTING SYSTEMS

All The Standard captioned herebelow are from NFPA Standards for Sprinkler and hydrant System 2013 Edition and must be Adhered to.

SECTION 1

1.0 General

a) **Plans**

Shop design Plans and flow calculation shall be done by the manufacturer based on engineers drawing and specification and shall conform to NFPA

b) **Approval of Installations**

Equipment and devices in this project shall be either be listed or approved according to NFPA

c) **Safety Requirement**

Safety requirement for the entire installations shall conform to NFPA

d) **Testing of the Installations**

Testing and commissioning of the entire installation shall done according to NFPA

e) **Distribution**

Carbon dioxide distribution shall be done according to NFPA 12 section 4.7 and in adherence to Annex C

REFERENCES

National Fire Protection Association (NFPA):

1. NFPA 13 – Standard on water sprinkler system
2. NFPA 14 – Standard on water hydrant system
3. NFPA 14 – Standard on Carbon Dioxide Extinguishing Systems.
4. NFPA 70 – National Electrical Code.
5. NFPA 72 – Standard For Protective Signaling Systems.

SECTION 2

PART 1 – GENERAL

1.01 DESCRIPTION OF WORK:

A. Supply and installation of wet Sprinklers, wet hydrant, firefighting system

B. Drawings: The contract drawings indicate the general arrangements of the wet Sprinklers and wet hydrant firefighting system

General

The particular specification details the requirements for the supply, installation and commissioning of the Automatic Sprinkler Installation. The sprinkler installation shall comply in all respects to the requirements set out in the Fire Offices' Committee Rules for Automatic Sprinkler Installation, 29th Edition for Special Hazard Class I - IV Installation.

The Contractor shall include for all appurtenances and appliances not necessarily called for in this specification or shown on the Contract Drawings but which are necessary for the completion and satisfactory functioning of the works.

No claims for extra payment shall be accepted from the Contractor because of his non-compliance with the above requirements.

If in the opinion of the Contractor there is a difference between the requirements of the specification and the Contract Drawings, he shall clarify this difference with the Engineer before tendering.

Climatic Conditions

(a) The following climatic conditions apply at the site of the Works and all plant, equipment, apparatus, materials and installations shall be suitable for these conditions.

(b) Where not otherwise stated, all ratings of plant, equipment and apparatus shall be interpreted at site rating and NOT sea level or other ratings.

(c)

Maximum temperature	32°C
Minimum temperature	4°C
Average temperature	13°C
Range of relative humidity	40 - 95%
Altitude	1800m above sea level
Latitude	01°19'S
Longitude	36°C 55'E
Rainfall	Extremely heavy at certain "periods

The Contractor shall be deemed to have taken account of the above details in his prices and his planning of the execution of the Works.

Scope of Works

The Contractor shall supply, deliver, erect, test and commission all the automatic fire fighting sprinkler installation which is called for in this specification and shown on the Contract Drawings listed in the drawing schedule.

The Contractor shall handover to the Electrical Contractor all the electrical control gear for the installation. The Electrical Contractor shall supply electrical power, inter-connecting cable and wiring to the sprinkler installation.

The Contractor shall supply and handover all the wiring and' control diagrams necessary for the works when required to do so.

Though the Electrical Contractor shall install starting and stopping gears, supply and install indication equipment with electrical regulations, the Contractor for the works contained in this document shall retain full responsibility for the correct functioning of the installation.

The sprinkler system, shall be fed by THre sources of water supply described below

i. A 200mm nominal diameter water service main tapped off three fire tanks
ii. A 1,000,000 litres water storage tanks and INo. automatic electric pump and INo. pump to be driven by a compression ignition(diesel) type engine and 2No . Jockey pumps
iii. A two-way inlet charger inlet breeching valve to be used by the Fire Brigade.

Automatic Sprinkler Pump Sets

The automatic sprinkler pumps shall consist of an automatic horizontally mounted centrifugal electrically driven pump; an automatic horizontal!}- mounted diesel engine-driven fire pump and jockey pumps. All the Pumps Shall be UL listed/FM approved

Pumps shall be connected to the normal incoming electrical grid main and to the standby generator and the other to be coupled to a diesel engine.

Pumps

UL listed/ FM Approved Sprinkler Firefighting Pump set comprising of:

Diesel Fire Pump :
1No. Diesel driven Pump to NFPA 20 Standard. The pump to be capable of delivering 56 L/S against pressure of 25bar (minimum) complete with isolating valves, non-return valves, strainers, pressure gauges, engine, 200 liter Diesel storage tank full of diesel and automatic Engine starting Mechanism to be connected to the control panel

Diesel Fire Pump Controllers shall be designed to control and monitor the fire pumps, fulfilling the requirements described by the fire-pump controller standards. FM- Factory Mutual must certify the fire-pump controllers/ UL- Underwriters Laboratories. The fire-pump controllers monitor the operation status and in the case of fire, the controller will receive a signal from the pressure switch and start the fire-pump. Fire controllers shall be wired fail-safe, and in the event of any control, cable becoming loose will start the fire pumps. The controllers shall operate the pumps in an automatic on / manual off condition. Once the fire pump has started via the controller, shall not stop until it is manually shut down.

Electric Fire Pump
1No. Electrically driven Pump to NFPA 20 Standards. The pump to be capable of delivering 56L/S against pressure of 25bar (minimum) complete with isolating valves, non-return valves, strainers, pressure gauges and automatic Engine starting Mechanism to be connected to the control panel Electric Fire Pump Controllers shall be designed to control and monitor the fire pumps, fulfilling the requirements described by the fire-pump controller standards. FM- Factory Mutual / UL- Underwriters Laboratories must certify the fire-pump controllers.

The fire-pump controllers monitor the operation status and in the case of fire, the controller will receive a signal from the pressure switch and start the fire-pump. Fire controllers shall be wired fail-safe, and in the event of any control, cable becoming loose will start the fire pumps. The controllers shall operate the pumps in an automatic on / manual off condition. Once the fire pump has started via the controller, shall not stop until it is manually shut down.

Jockey Fire Pumps

2No, Electrically driven Jockey pump to NFPA 20 Standards. Capable of delivering 5.6 l/s at set pressure of 26 bars each (minimum) complete with isolating valves, non-return valves, strainers, pressure gauges and automatic Engine starting Mechanism to be connected to the control panel Jocky Fire Pump Controllers shall be designed to control and monitor the fire pumps, fulfilling the requirements described by the fire-pump controller standards. FM- Factory Mutual / UL- Underwriters Laboratories must certify the fire-pump controllers.

The fire-pump controllers monitor the operation status and in the case of fire, the controller will receive a signal from the pressure switch and start the fire-pump. Fire controllers shall be wired fail-safe, and in the event of any control, cable becoming loose

will start the fire pumps. The controllers shall operate the pumps in an automatic on / manual off condition. Once the pressure drop the duty jockey pump shall stary and in event it is unable build up pressure the system shall start automatically shall not stop until it is manually shut down.

Electric Motor Driven Pumps

The motor shall be three phase totally enclosed fan cooled squirrel cage continuously rated complying in general with BS 2613/1970 and BS 5306 Part 2.

Provision shall be made for low level cut outs to the pumps to prevent dry pump run in the event of low level water conditions.

The pumps shall be provided with a plate giving the output pressure at the nominal flow specified. Where the performance characteristic is achieved with an orifice plate not integral with pump delivery, the pump nameplate shall carry a reference to the face that the performance given is that of the pump and orifice plate combination and reference shall be made to the orifice K factor.

The electric supply shall be obtained from the main public supply. The electrical connections shall be such that a power supply is always available for the motor when the switches for the distribution of the other power throughout the premises are open. Any switches on the power feed to the motor must be clearly labeled "SPRINKLER PUMP MOTOR SUPPLY - NOT TO BE SWITCHED OFF IN THE EVENT OF FIRE".

A tell-tale indicator lamp or lamps shall be provided to show that; there is a power supply available for the motor. The failure of any one phase of the supply shall be indicated. The indicators shall be near the pump and so placed that the maintenance personnel can readily see it. All indicator lamps shall be in duplicate.

An automatic warning of power failure to the motor starting switch (of any one phase of the supply) shall be given visually and audibly at some suitable location. Power to this warning shall be taken from a separately switched sub circuit to that feeding the motor.

The Diesel Engine Driven Pump Engine Room

The Engine Room shall be provided with adequate ventilation for the air required for aspiration and to limit the temperature rise in the room, to 10°C above the ambient temperature when the engine is on full load.

Type and Design

Vertical type multi-cylinder four-stroke engine, complete with all \ necessary ancillary equipment and drives, constructed to comply with BS 649 and suitable for running continuously on oil engine fuel to BS 2869, Class A.

The engine must be: -

Of the compression ignition mechanical direct injection type, capable of being started without the use of wicks, cartridges, heater plugs or either, at an engine room temperature of 7°C and must accept full load within 15 seconds from the receipt of the signal to start.

a) Naturally aspirated. Super-charged or turbo-charged and water/ cooled.

b) Capable of operating continuously on full load at the site elevation for a period of six hours.

c) Provided with a governor to control the engine within 4.5% of its rated speed under any condition of load up to the full load rating.

d) Any manual device fitted to the engine, which could prevent the engine starting, must return automatically to the normal position.

e) The coupling between the engine and the pump must allow each unit to be removed without disturbing the other.

Rating

The rating shall be continuous as defined in NFPA

Speed and Governing

The normal speed of the engine shall be 1500 revolutions per minute.
Speed governing shall be BS 649, Class A, and over speed, protection shall be provided.

Cooling

Engine cooling shall be by water jacket, with water circulating pump and heavy-duty radiator with mechanically or electrically driven fan. The radiator shall be fitted with flanges or other suitable arrangement to enable ventilation ductwork to be attached with airtight joints. Te fan rating shall be adequate allowing for the additional resistance to airflow of any ductwork and louvers fitted.

The cooling equipment shall be composite with the engine.

A thermostatically controlled valve shall be provided in the cooling system to assist rapid heating up of the water in the engine jacket when starting from cold and to control its temperature rise a water-cooled lubricating oil stabilizer complying with BS 3274, shall be incorporated in the engine cooling system. Sufficient inhibitor shall be added to the cooling water to protect the cooling system from internal corrosion

Engine Starting

Engine starting shall be by a battery powered electric starter motor;, complete with automatic starting and sequencing control equipment and starter cut-out switch. The engine starting control equipment shall be arranged to disconnect the mains operated batten" charger to prevent it from being overloaded during starting. The starter motor shall be of adequate power for its duty* and of the "non-hold-on" type in which the pinion is moved axially to engage within a gear-ring on the engine fly wheel before the starter motor is fully energized. The pinion shall positively disengage when the engine starts or when the motor is de-energized.

Fail-to-Start Protection

The starting equipment shall incorporate a suitable automatic process timer, so arranged that, if the engine fails to start within a reasonable time (e.g. 8 seconds). The starter motor shall be disconnected. The starting attempt shall be repeated after an interval of 3 seconds and, if necessary, repeated a third time. If the engine fails to start at the third attempt, the starter motor shall be automatically isolated from the battery.

Disconnection of the starter by the fail-to-start device shall operate the visual warning indicator(s) and audible alarm(s) specified, hereafter.

Engine safeguards

Safeguards shall be provided and arranged to stop the engine automatically by de-energizing a solenoid coupled to the stop lever on the fuel injection pump rack. The operation of this safeguard shall at the same time give individual warning of the failure by illuminating an appropriate visual indicator and sounding audible alarm(s) as specified hereafter.

The safeguards shall operate when any of the following conditions occur, irrespective of whether the set is on automatic or manual control: -

- Engine Over speed.
- High Cooling Water Temperature
- Low Lubricating Oil Pressure
- Low Cooling Waiter Level

A key operated switch shall be fitted on the control panel and so connected as to override the engine safeguards and. in an emergency, allow the engine to be restarted under manual control, but with the visual warnings remaining operative.

Oil Dipstick

A lubricating oil level dipstick suitable graduated shall be provided and located in accessible-position. The engine shall be totally enclosed and the engine components shall be lubricated via pressure oil system from an integrated oil pump driven by the engine.

Starting Handle or Barring Gear

Suitable means shall be provided for turning by hand the engine main shaft and the associated pump to facilitate inspection and overhaul and to allow hand starting if necessary.

Starter Battery

The starter battery shall be 24 volts heavy duty high performance quality lead-acid type of adequate size, suitable for trickle charging and rapid re-charging after use and shall be supplied complete with corrosion resisting outer container or box of an approved type standing direct on the floor.

The type, voltage and ampere-hours capacity' of the batter}' shall be stated in the appropriate schedule. The battery shall be supplied in a fully charged state ready for use and shall be complete with hydrometer for testing and electrolyte.

The tender price shall be based on the provisions of a lead-acid type battery, but an alkaline battery may be offered as an alternative and, together with its charging equipment, shall then be separately described and priced in the appropriate schedule.

Dynamo, Cut-out etc.

An engine driven battery-charging dynamo (or alternator with static-rectification) of adequate capacity shall be provided complete with cut out, automatic voltage regulator, ammeter, wiring and engine mounted control board.

Engine Instruments

The following dial type engine instruments shall be provided: -

- Engine shaft speed indicating tachometer reading revolutions per minute.
- Service hours counter.
- Lubricating Oil Pressure Gauge.
- Lubricating Oil Thermometer.
- Cooling Water Thermometer.

The instruments may be mounted on a suitable panel fixed to the engine or may be incorporated in the main control panel.

Exhaust System and Silencing

The exhaust system shall be manufactured in heavy quality steel tubing to BS 1387, fitted with suitable robust flexible gas tight sections close to the engine to allow engine movement and to reduce the transmission of engine vibration to the

remainder of the exhaust system and the surroundings. Bends shall have a minimum radius of three times the diameter of the tube. As far as possible, flexible sections shall be vertical, free from bends and have sufficient length or slack to allow free movement without damage.

Silencers shall be of heavy-duty baffle and absorption type, so designed and installed as to reduce noise to the minimum practicable level without appreciably impairing the working efficiency of the engine.

The silencers and exhaust pipework shall be property and adequately supported clear of fuel tank and feed pipes, and shall be provided with suitable insulation to protect personnel, plant and buildings from excessive heat.

The pipework shall drain away from the exhaust manifold and drain cocks shall be fitted in the lower parts of the system to enable condensate readily to be removed.

The system shall be so constructed as to enable it to be readily dismantled for maintenance. Bolts, washers and nuts shall be greased with graphite grease or other suitable heat resisting lubricant during assembly.

The finish of all exhaust pipework and silencers exposed to the open air shall be sprayed metallic aluminum by a process complying theBS 2569, Part 2, Process A.

The exhaust system shall terminate at a safe point outside of the building to be approved by the Engineer.

Intake Air Cleaner

A suitable arid efficient air cleaner/silencer of an approved type complying with BS 1701 Grade 'A' or 'B' for use in a medium atmosphere shall be fitted on the air intake manifold.

Drain Plugs and Cocks

Drain plugs and cocks, as appropriated shall be fitted adequately to drain the engine of lubricating oil, water and fuel. They shall be designed and constructed as to be free from leaks and so positioned as to be readily accessible and allow draining to be undertaken without need for special receptacles.

Fuel and Lubricating Oil Filters

Suitable and efficient oil filters of an approved type and construction, having replaceable filter elements, shall be provided in the fuel oil and engine lubrication systems. The oil filters shall be readily accessible and allow the elements to be changed without difficulty. The fuel oil filter shall be located as close as possible to the fuel pumps manifold.

Wiring and Engine Unit

The electrical wiring on the engine unit shall be carried out with MECC cable having a conductor minimum cross-section of 1.5mm^2 for single core cables and for multi-core cables.

All wiring shall be adequate!}- supported and protected from accidental damage and properly installed and terminated in suitable boxes with flexible connections, all in accordance with the manufacturers recommendations. Special arrangements shall be made where wiring is subject to movement and vibration. Mains voltage circuits and extra-low voltage circuits shall be segregated as practicable.

Fuel Tank and Connections

A fuel oil service tank shall be provided having a capacity sufficient to give ten hours full load running of the engine and manufactured and installed generally in accordance with BS 799, Part I. The tank complete with all necessary pipework, valves and connections, shall be arranged as an integral part of the set or shall be installed at high level on adequate and approved supports adjacent to the set.

The service tank shall be clearly lettered to indicate the type of oil to b e used and the capacity of the tank in litres and gallons, and shall be provided with the following: -

(i) Filling orifice, oil strainer, filling pipe extension and filler cap. .
(ii) Vent pipe to atmosphere.
(iii) Dial type contents level indicator, with adequate size scale clearly marked in proportional part content, i.e.empty, quarter, half, three-quarters and full.
(iv) Connections for the engine leak-off return pipe (where necessary).
(iv) Drain valve and drain hose connection.

Fuel Tank Filling Pump

A cast iron wall mounted hand operated semi-rotary fuel transfer pump shall be proved of a size capable (with normal operation) of transferring .fuel from the delivery drum or other vessel to the service tank at a rate of at least twenty' times the maximum consumption of the engine when at full output.

Coupling to Pump

The engine shall be coupled to the pump in an approved manner in a monobloc arrangement or by a suitable shaft coupling and satisfactorily guarded to comply with BS 1649.
The Contractor shall state the method of coupling proposed.

Installation Control Valves

The Contractor shall supply and install approved installation control valves called for on the Contract Drawings and in this specification. The installation control valves set shall

comprise of a main stop valve, wet pipe alarm valve, a water motor alarm and gong and installation pressure gauges.

Spare Parts

The following spare parts shall be supplied with the engine and kept on hand: -

- Two sets of filters, elements and seals.
- Two sets of lubricating oil filter elements and seals.
- Two sets of belts.
- One complete set of engine - joints, gaskets and the hoses.
- Two injector nozzles

Control Panel

The Control panel is to be of Powder coated mild steel construction or other approved material, moisture-proof and insect and rodent-proof and shall be provided complete with a wiring diagram that is moisture-proof and may be mounted on the common pump base frame and to conform to NFPA .

Pressure switches shall control the pump operation, the control panel is therefore to include the following: -

a) Manual Stop/Reset push button to No. 1 duty pump connected to Electrical Mains.
b) Manual Stop/Reset push button to No. 2 standby pumps connected to diesel pump.
c) Test push button with green indicator light to No. 2 stand by pump.
d) Electric Alarm bell provided for remote warning of systems operation during pump run.
e) Red warning for indication no water in storage tank.

Sprinkler Heads

The sprinkler heads shall be of conventional pattern, designed with a universal deflector and similar to "GRINNELL" type E., quartzoid bulb sprinkler heads as manufactured by Womald Ltd. or equal and approved.

All sprinkler heads shall comply with the following requirements: -

- Nominal Size 20mm.
- 'K' Factor 80%.
- Temperature Rating 68°C (Red Colour).
- Temperature Rating 141°C (Blue Colour).

Pipework

Materials for piping and the standards covering these installations shall be as described in NFPA 13. Black or galvanized steel pipe shall be either ASTM A 53 seamless grooved for pipe bigger than 65mm while 50mm and below to be electric welded, Grade A or B. The Pipe shall be Schedule 40 and above.

Pipe Supports ;

The variety and type of pipe supports shall be kept to a minimum and their design shall be such as to facilitate quick and secure fixing to both metals, concrete and would.

Piping shall be secured in the normal manner with pipe clips. 'If bolts shall not "be used as substitute for pipe clips.

Where the design of the structure is in reinforced concrete pipe hangers and brackets shall be secured to the structure by means of redheads, raw bolts or other approved means.

Where the structure is constructed to hollow clay pot and concrete fill the Contractor shall arrange for his pipe hangers and brackets to be supported from the concrete columns and beams. No rawbolts and redheads shall be inserted in any clay pot construction unless specifically and exceptionally approved by the Engineer.

An approximate guide to maximum permissible support spacings in millimeters for different classes of pipe and tube is given for horizontal runs in the following table: -

Vertical pipe runs shall be supported at intervals not greater than one and a half times the distance shown in the table below: -

Size N//Bore (mm)	Copper to BS 659 (mm)	Steel Tube to BS 1387 Heavy Grade (mm)
15	1200	1800
20	1200	2000
25	1500 .	2500
32	1500	2500
40	1800	2700
50	1800	3000
65	1800	3400
80	200	3400
100	2500	3700
125	2700	4000
150	2700	4300

The Contractor shall submit all pipe support design proposals for the Engineer's approval.
Positions and type of supports shall be shown on the working drawings and submitted to the Engineer's approval.

Pipe hangers to be as Hira walraven,Ul Listed,BIS Heavy Duty Industrial Clamps, 5" Locking Bolts, HD1501 (M8/10, M10/12 (cat No. BUP 1000),BIS Rubber Lined Split Clamp, All hangers to be sound insulating as DN 4109, and 800mm raw bolt. All the hangers to be equal spaced at a distance of 600mm.for the entire length of the pipeline

Pipe Fittings

All valves, pressure gauges, pressure switches, meters and any other accessories must be UL-listed and/or FM approved

Flanges

The flanges shall comply with BS 4504:1969. All flanges shall comply with a nominal pressure rating of 16 bar (PN 16) and shall be either grey cast iron or steel with raised faces.

Gaskets

The gaskets for use with flanges to BS 4504: 1969 shall comply with BS 4865 Part I 1972 for pressure up to 64 bars.

Foot Valves
The foot valves shall be as Glenfield check valve No. 5803 to BS 5153: 1974 incorporating strainer, with flanges to BS 4504 PN 16.
The strainer shall be Mechanic Cast Iron with strainer area not less than twice the suction pipe area.

Non-Return Valves

The non-return valves shall be as Glenfield No. 5003 conforming to BS 5153: 1974 with flanges to BS 4504 PN 16,
The body, door and cover are to be of Mechanite Cast Iron construction with gunmetal seat to BS 1400.

Gate Valves

The gate valves up to and including 150mm diameter shall be as Glenfield RS Gate Valve 3500 series to BS 5163 with flanges to BS 4504 PN 16 with raised faces. The valve is a double flanged cast iron wedge gate valve for water work purposes with Methanide Cast Iron body to BS 1452 Grade 14 rubber covered Methanide Cast-iron gate. The stem is to be of forged stainless steel to BS 970 with Methanide cast iron hand wheel.

Finish. Painting

Upon completion of testing and commissioning the sprinkler installation shall be painted with INo. coat red oxide and 2No, coats of paint to the Engineer's requirements.

Approval of Automatic Sprinkler System

After the tender contract has been let, the Contractor shall prepare complete detailed working drawings of the protection with plans of the floor, details of water supplies up to the installation control valve and any pressure reducing valves, water meters, water locks and any orifice plates. The drawings shall be on an indicated scale not less than 1:100. A key of any symbol used is to be included. A summary schedule should be included stating: -

- Total number of sprinkler heads on each installation.
- Height of highest sprinkler head in each installation.
- Type of installation, in this case to be wet pipe S3rstem and the size of main control valves to be indicated.

The Contractor to the City Commission, Chief Fire Officer, shall submit the above data for final approval before erection of the equipment is commenced.

Instruction Period

The Contractor shall allow in his contract sum for instructing of the use of the equipment to the Client's maintenance staff. The period of instruction may be within the contract period but may also be required after the contract period has expired.
The period of time required shall be stipulated by the Client but will not exceed seven days in which time the Client's staff shall be instructed in the operation and maintenance of the equipment.

Maintenance and Servicing Contract

The Contractor shall, if required, enter into a maintenance and service agreement, with the employer, for this installation for a period of up to five years from the day following the last day of the Liability for Defects Period which offers the same facilities as those specified in Clause 1.41 (initial Maintenance) of Section I of this document.

PARTICULAR SPECIFICATIONS FOR PORTABLE, FIRE EXTINGUISHER AND HOSE REEL INSTALLATIONS

GENERAL

The particular specification details the requirements for the supply and installation and commissioning of the Portable Fire Extinguishers and Boosted Hose Reel System. The contractor shall include for all appurtenances and appliances not necessarily called for in this specification or shown on the contract drawings but which are necessary for the completion and satisfactory functioning of the works.

If in the opinion of the contractor there is a difference between the requirements of the Specifications and the Contract Drawings, he shall clarify these differences with the Engineer before tendering.

SCOPE OF WORKS

The contractor shall supply, deliver, erect, test and commission all the portable fire extinguishers and Hose Reel which are called for in these Specifications and as shown on the Contract Drawings.

WATER/CO_2 EXTINGUISHERS

These shall be 9-litre water filled CO_2 cartridge operated portable fire extinguishers and shall comply with B.S. 1382: 1948 and to the requirements of B.S.4523: 1977. Unless manufactured with stainless steel, bodies shall have all internal surfaces completely coated with either a lead tin, lead alloy or zinc applied by hot dipping.
There shall be no visibly uncoated areas.

The extinguishers shall be clearly marked with the following:

h) Method of operation.

i) The words 'WATER TYPE' (GAS PRESSURE) in prominent letters.

j) Name and address of the manufacturer or responsible vendor.

k) The nominal charge of the liquid in imperial gallons and litres.

l) The liquid level to which the extinguisher is to be charged.

m) The year of manufacture.

n) A declaration to the effect that the extinguisher has been tested to a pressure of 24.1 bar (350 p.s.i.).

h) The number of British Standard 'B.S' 1382 or B.S. 5423: 1977.

6.01 WARRANTY:

All Carbon Dioxide system components furnished under this contract shall be guaranteed against defect in design, material and workmanship for the full warranty time which is standard with the manufacturer and/or supplier but not less than one (1) year from the date of system acceptance. In addition, the installing contractor must guarantee the system against false actuation or leakage due to faulty equipment, design or workmanship for a period of one (1) year from final acceptance. In the event of Carbon Dioxide agent leakage or system discharge from any of the above conditions, the installing contractor shall completely recharge and recondition the system at no cost to the owner.

BILLS OF QUANTITIES - PREAMBLE

1. The Bills of Quantities shall be read in conjunction with the Notes to Tenderer's, Preliminaries, General Conditions of Contract and Technical Specifications.

2. The rates and prices tendered in the priced Bills of Quantities shall, except insofar as it is otherwise provided under the Contract, include all Plant, equipment, labour, supervision, materials, erection, maintenance, insurance, profit, together with all general risks, liabilities and obligations set out or implied in the Contract, including taxes and duties (including V.A.T). The quantities given are provisional and are for guidance only. The whole works shall be re-measured upon practical completion.

3. A rate or price shall be entered against each item in the priced Bills of Quantities, whether quantities are stated or not. The cost of items against which the Contractor has failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the Bills of Quantities.

4. The whole cost of complying with the provision of the Contract shall be included in the Items provided in the Bills of Quantities, and where no items are provided the cost shall be deemed to be distributed among the rates and prices entered for the related Items of Work.

5. General directions and descriptions of work and materials are not necessarily repeated nor summarized in the Bills of Quantities. Reference to the relevant sections of the Contract documentation shall be made before entering prices against each item in the priced Bills of Quantities.

6. Provisional Sums and contingencies included and so designated in the Bills of Quantities shall be expended in whole or in part at the sole discretion of the Engineer.

7. Errors in pricing will be corrected by the Engineer for any arithmetic errors in computation or summation as follows:-

    a) Where there is a discrepancy between amounts in figures and in words, the amount in words will govern; and

    b) where there is a discrepancy between the unit rate and the total amount derived from the multiplication of the unit price and the quantity, the unit rate as quoted will govern, unless in the opinion of the Engineer, there is an obviously gross misplacement of the decimal point in the unit prices, in which event the total amount as quoted will govern and the unit rate will be corrected.

The under listed information should accompany the tenders returned:

a) Company profile

b) Brochure of equipment offered detailing all the features of interest and reference sites of similar installation.

c) Equipment guarantee (by the Contractor) and Warranty period specified by the manufacturer.

d) Valid Certificate dealership License (or appointment letter) from the Parent / Brand Company.

e) A copy of V.A.T Registration certificate

f) A copy of P.I.N Registration certificate

g) A tax compliance certificate

h) The Contract Completion Date will be as calculated from the contract period quoted for**.**

i) In the light of this state delivery period (supply, installation and commissioning) upon award of tenders of as:

…….
Days / Weeks / Months / Years (delete appropriately)

e) After expiry of warranty period, proposed charges to be levied for annual maintenance of the equipments.

f)

1st Year Kshs. ……

2nd Year Kshs……..

3rd Year Kshs…….

NOTE: *The above are to be labour only charges excluding parts which will be fitted only with prior approval from the Client.*

QUALIFICATION INFORMATION

TENDER COMPLIANCE

All bidders must fill and attached required documentary evidence as requested below:

General

	Instruction to the bidders	To be filled by the bidders	Commennt	Marks
Incoporation certificate	*Attach Copy the certificate and fill the certificate No.*			
Trade licence	*Attach Copy the Trade Licence and fill the certificate No.*			
PIN cerrtificate.	*Attach Copy the certificate and fill the pin No.*			
V.A.T certificate	*Attach Copy the certificate and fill the certificate No.*			
Tax compliance certificate	*Attach Copy the certificate and fill the certificate No.*			
Ministry of energy registration certificate	*Attach Copy the certificate and fill the certificate No. and Category*			
Ministry of public works and housing registration certificate	*Attach Copy the certificate and fill the certificate No. and Category*			
Energy regulation commission registration certificate	*Attach Copy the certificate and fill the certificate No.*			
Plumber / Drain layer certificate	*Attach Copy the certificate and fill the certificate No. and Category*			
Contractor Registration committee.	*Attach Copy the certificate and fill the certificate No.*			
C.C.K licence(for structured cabling)	*Attach Copy the certificate and fill the certificate No.*			
Bid bond	*Attach and fill the Source (bank) and Amount*			

Company Perfomance and Certification

	Instruction to the bidders	To be filled by the bidders	Commennt
Company organization structure	*Please attach*		
Company directors	*Fill in the Numbers of directors, Citizenship and there role if any*		
	1		
	2		
	3		
	4		
	5		
Staffing	*Fill in the Numbers of staff*		
	1. Administration		
	2. Finance		
	3. Technical		
	a. Project managers		
	b. Site agent		
	c. Engineers		
	d. Technicians		
	e. Artisan		
	e. Charge hands		
	4. Support staff		
Staff Credentials	*1. Company CEO*		

	2. Project manager (proposed for this project)		
	3. Project Site agent (proposed for this project)		
	4. Project Site Foreman (proposed for this project)		
Finances	*Fill in and attach the proof*		
	1. Company bankers		
	2. Turnover		
	Year 2014		
	Year 2015		
	Year 2016		
	Audited account for the years above (please Attach)		
Bidder Certification	*Please fill in and attach proof (eg ISO, NFPA, FOC, ASHRAE, CIBSE, etc)*		
	1		
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	9		

Similar Project Completed for the Last Three years	*Please fill in the name, Client Award sums and Final account sums.*		
	1		
	2		
	3		
	4		
	5		
Current Project	*Please fill in the name, Client Award sums*		
	1		
	2		
	3		
	4		
	5		
	6		
	7		
Terminated or abandoned Project	*Please fill in the name, Client, Award sums (please give the Reason)*		
	1		
	2		
	3		
	4		

Litigation history	*Please fill in the name, Client Award sums (please give the Reason)*		
	1		
	2		
	3		
	4		
References and testimonials	*Please fill in give contacts*		
	1		
	2		
	3		
	4		

PRODUCTS CERTIFICATION

	Instruction to the bidders	To be filled by the bidders	Commennt
	Manufacturer of the System to be used		
Fire Sprinkler Pumps	*Certification for the Sprinkler fire pumps manufacturer. Please fill in and attach proof (eg ISO, SGS, NFPA, FOC etc)*		
	Certification for the Sprinkler fire pumps Please fill in and attach proof		
	1. ISO		
	2. KEBS		
	3 NFPA		
	4. EN54		
	5. LPCB		
	6. Any other please (please Specify)		
	Certification for the Fire Panel. Please fill in and attach proof		
	1. ISO		
	2. KEBS		
	3 NFPA		
	4. EN54		

	5. LPCB		
	6. VDS		
Hydrant Fire Pumps	*Certification for the system supplier/ manufacturer. Please fill in and attach proof (eg ISO, SGS, etc)* *Certification for the - Fire hydrant pumps Please fill in and attach proof*		
	1. ISO		
	2. KEBS		
	3 NFPA		
	4. EN54		
	5. LPCB		
	6. UL listing		
	6. Any other please (please Specify)		
	Certification for the Fire Panel. Please fill in and attach proof		
	1. ISO		
	2. KEBS		
	3 NFPA		
	4. EN54		
	5. LPCB		
	6. Any other please (please Specify)		
Pipes and Fitting	*Certification for the system supplier/ manufacturer. Please fill in and attach proof (eg ISO, SGS, etc)*		

	1. ISO		
	2. KEBS		
	3 NFPA		
	4. EN54		
	5. LPCB		
	6. ASTM/ASME		
	7. Any other please (please Specify)		
	Certification for the Fire pipes fitting eg valves etc Please fill in and attach proof		
	1. ISO		
	2. KEBS		
	3 NFPA		
	4. EN54		
	5. LPCB		
	6. Any other please (please Specify)		
	Calculation result Authentic (please Attach)	*Proposed KEMSA Warehouse & Offices – Electrical Installation Works Particular Specifications*	
	3. The Pump room details		
	Installer Certificate / Licence Please fill in and attach proof		

Installer Licences/Certification	*1*		
	2		
	3		
	4		
	Integrity system testing equipment avialable for this project		
IST Testing Equipment	*1*		
	2		
	3		
	4		
	1. Spare part avialability		
Back UP Service	*2. Approved/Acredited Local Agent/Installer*		

FORM OF AGREEMENT

FORM OF AGREEMENT

THIS AGREEMENT, made the_____ day of_____ 20_____

between

KENYA MEDICAL SUPPLIES AUTHORITY of P.O.BOX 47715 – 00100 NAIROBI

(hereinafter called "the Employer") of the one part

AND_____

_____

____

of [or whose registered office is situated

at]_____

(hereinafter called "the Contractor") of the other part.

WHEREAS THE Employer is desirous that the Contractor executes

PROPOSED CONSTRUCTION OF KEMSA MODERN WAREHOUSE & OFFICE BLOCK,

TENDER NO. GF-KEMSA-CONST - 5/OIT 6/2017-2018 (hereinafter called "the Works") located on

Land LR No. 9042/176 Embakasi, Nairobi and the Employer has accepted the tender submitted by the Contractor for the execution and completion of such Works and the remedying of any defects therein for the Contract Price of

Kenya Shillings_____(Amount in figures],

Kenya Shillings_____(Amount in figures],

NOW THIS AGREEMENT WITNESSETH as follows:

3. In this Agreement, words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.
4. The following documents shall be deemed to form and shall be read and construed as part of this Agreement i.e.
    (viii) Letter of Acceptance
    (ix) Form of Tender
    (x) Conditions of Contract Part I
    (xi) Conditions of Contract Part II and Appendix to Conditions of Contract
    (xii) Specifications
    (xiii) Drawings
    (xiv) Priced Bills of Quantities

5. In consideration of the payments to be made by Kenya Medical Supplies Authority to the Contractor as hereinafter mentioned, the Contractor hereby covenants with Kenya Medical Supplies Authority to execute and complete the Works and remedy any defects therein in conformity in all respects with the provisions of the Contract.
6. Kenya Medical Supplies Authority hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties thereto have caused this Agreement to be executed the day and year first before written.

The common Seal of

_____

Was hereunto affixed in the presence

of_____

Signed Sealed, and Delivered by the said_____

Binding Signature of Kenya Medical Supplies Authority_____

_____

Binding Signature of Contractor_____

In the presence of

(i) Name_____

Address_____

Signature_____

(ii) Name_____

Address_____

Signature_____

FORM OF TENDER

FORM OF TENDER

Tender No:.GF-KEMSA-CONST - 5/OIT 6/2017-2018

Date_____

To: Kenya Medical Supplies Authority

P. O. Box 47715 - 00100

NAIROBI.

Dear Sirs,

RE: PROPOSED CONSTRUCTION OF KEMSA MODERN WAREHOUSE & OFFICE BLOCK

In accordance with the Instructions to Tenderers, Specifications and Bills of Quantities for the execution of the above named Works, we, the undersigned offer to construct, install and complete such Works and remedy any defects therein for the sum of Kshs.-

_____*[Amount in figure]*

Kenya

Shillings_____

_____ *[Amount in words]*.

We undertake, if our tender is accepted, to commence the Works as soon as is reasonably possible after the receipt of the Architect's notice to commence, and to complete the whole of the Works comprised in the Contract within _____*(In Words)* (

_____) *(in Figures)* Weeks.

We agree to abide by this tender until _____ *[Insert date]*, and it shall remain binding upon us and may be accepted at any time before that date. Unless and until a formal Agreement is prepared and executed this tender together with your written acceptance thereof, shall constitute a binding Contract between us.

We understand that you are not bound to accept the lowest or any tender you may receive. Dated this_____ day of _____ 20_____

Signature_____ in the capacity of_____ duly authorized to sign tenders

for and on behalf

of_____

Tenderer's Name:

_____

Tenderer's Address:

_____

Tenderer's Signature:

_____

Witness's Name:

_____

Witness's Address:

_____

Witness's Signature: _____ Date

_____

BILLS OF QUANTITIES

BILL 1

WAREHOUSE

PLUMBING,DRAINAGE & FIRE FIGHTING

INSTALLATIONS

A SANITARYWARE & FITTINGS -WAREHOUSE

Sanitaryware & Fittings including all materials and jointings, waste and overflow pipe fittings:-Note all sanitary fittings are coloured to project architect specific colour.

Item	Description	Units	Total	Rates (Kshs.)	Total (Kshs.)
A1.01	**WC Suits:** Duravit D-Code back to wall wash down model horizontal outlet model-N0. 211509..00 (white in colour), accessory are toilet seat and cover without softclose automatic closure, hinges stainless steel Model No. 0067310000 with all fixing included, complete with docol WC concealead flushvalve, bend connector. or equal and approval	No.	17		
A1.02	**Toilet roll holder:** Duravit D-Code toilet roll holder cat no. #009926 or equal and approval	No.	17		
A1.03	**Toilet brush Holder:** Duravit D-Code toilet brush cat no. #009927 or equal and approval	No.	17		
A1.04	**Wash hand basin:** Duravit D-Code vanity countertop basin 545mm, with overflow,with tap platform Model No. 033754..00 (white in colour) with a fixing, complete with one Non Conculsive time delay tapis or docol basin tap, chrome plated waste Ø 32mm and chrome plate bottle trap. Angle valves and any other necessary accessories. or equal and approval	No.	17		
A1.05	**Wash hand basin** Wash hand basin as Duravit D-Code 55 cat. no. 2310550-000. Brassware as self closing pillar tap 1/2" as Grohe cat No. 36265000, chrome plated complete with pop up waste, angle valves, complete with; chrome plated chain waste 32mm c and chrome plate bottle trap 32mm P trap,angle valve and wall brackets to fit.	No.	5		

Item	Description	Units	Total	Rates (Kshs.)	Total (Kshs.)
A1.06	**Mirror:** 900x600mm silver plated plain glass mirror with bevelled edges and fixed with chrome plated screws and dome shaped cover. or equal and approval	No.	22		
A1.07	**Coat Hooks:** Duravit Coat hooks. or equal and approval	No.	17		
A1.08	**Soap dispenser:** Press type Liquid soap dispenser made out of enamal coat mild steel as Mediclinic or equal and approval	No.	4		
A1.09	**Hand driers:** No Touch Vandal Resistance Automatic Hand drier as Mediclinic or equal and approval	No.	4		
A1.10	**Urinal bowl:** Duravit D-Code Concealed inlet, without flushing rim, for 1/2" connection, included jet nozzle, inlet-set, waste and bottle trap Ø 32mm model without cover Model No. 082930..00 (white in coulour) with all fixing included, complete with actuator urinal docol Concealed Flush Valve. bend connector. or equal and approval	No	6		
A1.11	**Electronic air fresheners** Automatic air freshener dispensing system and odor neutralizing to control an area more than 800 cuft refills lasting upto 100days, with proactive display to indicate refill or batteries need replacemen as mediclinic dispenser with timer & sensor or equal and approval	No	2		

Item	Description	Units	Total	Rates (Kshs.)	Total (Kshs.)
A1.12	**Paper towel dispensers** Decorative wall mounted paper towel dispensers 230mm high, 300 mm wide and 100mm deep with easy tear holder and a spring loaded mechanism to release one sheet per pull. Removable lid and opens sides for towel level viewing and easy refilling complete with all accessories including a foot operated stainless steel disposed towel bin with cover (300mm high and 300mm diameter) as Mediclinic.or equal and approval	No	2		
A1.13	**Utility /Cleaners sink:** Utility basin as stark 3 without oveflow, without tap platform,with grid chrome dimensions of 480x425mm Model No. 031348..00 (white in colour) and all accessory as grid,chrome,fixing Model No. 0050011000., include with grating cat No. FC1034WH, Bib tap as tapis bend connector. orr equal and approval	No.	2		
A1.14	**Shower fittings:** Cobra Stella shower set (mixer, overhead shower c/w arm with FxF stoptaps (3338ST026/065 CxC). bend connector.or equal and approval	No.	12		
A1.15	**Shower tray:** Concealed Shower tray as Duravit D-Code tray 900x900mm c/w 40mm b.s.p waste and trap cat no. 720063.or equal and approval	No.	19		
A1.16	**Instant Shower heater:** Intantaneous water heater for showering, With built -in safety features like electronic controler, shower kit with 5 Jets Multi spray head. Power consumption of 3kw single phase, 3.1kg weight. The heater to be as Amico E3023 Aristonbend connector. or equal and approval	No.	9		

Item	Description	Units	Total	Rates (Kshs.)	Total (Kshs.)
A1.17	**Kitchen Sink:** Single bowl single drainer Stainless Steel kitchen sink c/w chrome plated 1½" chrome plated bottle trap, 40mm chrome plated chain waste fitting(unslotted) and kitchen sink mixer as wall type cat no. EX5002/CH .or equal and approval	No.	2		
A1.18	**Instant Kitchen Water heater:** Undersink instantaneous heater of capacity 10litres and rating 3kw complete with adjustable thermostat, 40'C temperature lock,standard spout and valve, taps, mixer and any other necessary accessories as ariston. bend connector or equal and approval	No.	0		
A1.19	**Polylefin sinks**: single compartmentCountertop sink,corner drain with integrally molded outlet of standard 1½" male thread ,with flush mounted rim,complete with overflows,p traps,interceptor recovery traps, as Product NO.52L21600,ccomplete with mixing faucet model 32W406SG and any other neccessary fittings	No.	1		
A1.20	Contigency				354,828
A1.21	**Total for sanitary fiitting c/f Price Summary Page**				

PLUMBING & DRAINAGE

B1 Plumbing Works - WAREHOUSE

Lead free ASTM uPVC Solvent Weld Plumbing System (ASTRAL Aquariuys) cold water & Lead free CPVC Solvent Weld Plumbing System (ASTRAL FLOWGUARD) hotwater pipework systems with fittings fixed and welding to be in accordance to the manufacturer's printed instructions as described. All uPVC & CPVC bends,Tees,reducing Tees,reducers etc. are to be formed in accordance to the manufacturer's printed instructions. The installations to have the various sizes of connectors, adaptors, sockets, reducers, holdbats, clips/brackets etc. as required for satisfactory functions. NOTE: The pipe diameters given are internal

Item	Description	Units	total	Rates (Kshs.)	Costs (Kshs)
B1.01	15mm bore water pipes	Lm	10		
B1.02	20mm Ditto	Lm	40		
B1.03	25mm Ditto	Lm	30		
B1.04	32mm Ditto	Lm	48		
B1.05	40mm Ditto	Lm	8		
B1.06	50mm Ditto	Lm	10		
B1.07	15mm Bends and Elbows	No	8		
B1.08	20mm Ditto	No	24		

Item	Description	Units	total	Rates (Kshs.)	Costs (Kshs)
B1.09	25mm Ditto	No	10		
B1.10	32mm Ditto	No	17		
B1.11	40mm Ditto	No	4		
B1.12	50mm Ditto	No	0		
B1.13	50mm Tee	No	0		
B1.14	40mm Ditto	No	4		
B1.15	32mm Ditto	No	17		
B1.16	25mm Ditto	No	10		
B1.17	20mm Ditto	No	24		
B1.18	50x40mm Ditto	No	0		

Item	Description	Units	total	Rates (Kshs.)	Costs (Kshs)
B1.19	50x32mm Ditto	No	0		
B1.20	50x25mm Ditto	No	0		
B1.21	50x20mm Ditto	No	0		
B1.22	40x32mm Ditto	No	8		
B1.23	40x25mm Ditto	No	0		
B1.24	40x20mm Ditto	No	0		
B1.25	32x25mm Ditto	No	12		
B1.26	32x20mm Ditto	No	12		
B1.27	25x20mm Ditto	No	6		
B1.28	25x15mm Reducer	No	0		

Item	Description	Units	total	Rates (Kshs.)	Costs (Kshs)
B1.29	20x15mm Ditto	No	4		
B1.30	50mm Gate valves as peglar	No	0		
B1.31	40mm Ditto	No	8		
B1.32	32mm Ditto	No	8		
B1.33	25mm Ditto	No	4		
B1.34	20mm Ditto	No	0		
B1.35	15mm Ditto	No	0		
B1.36	50mm ballvalves	No	2		
B1.37	40mm Ditto	No	0		
B1.38	50mm pipe sockets	No	0		

Item	Description	Units	total	Rates (Kshs.)	Costs (Kshs)
B1.39	40mm Ditto	No	4		
B1.40	32mm Ditto	No	24		
B1.41	25mm Ditto	No	5		
B1.42	20mm Ditto	No	20		
B1.43	15mm Ditto	No	5		
B1.44	50mm pipe Unions	No	0		
B1.45	40mm Ditto	No	2		
B1.46	32mm Ditto	No	24		
B1.47	25mm Ditto	No	15		
B1.48	20mm Ditto	No	20		

Item	Description	Units	total	Rates (Kshs.)	Costs (Kshs)
B1.49	15mm x 300mm long flexible connector complete with chrome plated stop cocks.	No	60		
B1.50	20mm x 300mm long flexible connector complete with chrome plated stop cocks.	No	19		
B1.51	15mm Water stand pipe c/w Locable Bip taps	No	6		
B1.52	**POTABLE WATER TANK** 25,000Lts capacity tank overall size: 4,000 Length,3,000 breadth, 3,000high, located in the roof.Tank to be sectional steel potable water storage build from pressed steel panels 1.0m square bolted together complete with sealed taps, access cover, drain cocks, painted two coats inside and outside after assembly, including all hoisting and placing on suitable support beams in the roof as shown on the Contract Drawings. The tank shall have provision for 2No. 50mm outlet, 40mm supply pipe, 65mm overflow, 15mm warning pipe 100mm washout internal and external ladder and water level indicator	No	1		
B1.53	Allow for connection to the water supply from the Local Authority	Item	1		
B1.54	**Total for Plumbing works c/f to price collection page**				

Item	Description	Units	total	Rates (Kshs.)	Costs (Kshs)

B2 Internal Foul Drainage

PVC Drain waste & Vent system (ASTRAL DWV) for non pressure drainage & Sewerage application. Soil and waste systems to BS 4514 and 5225 with fittings fixed in accordance to the manufacturer's printed instructions and BS 5572 and manufactured by "KEY TERRAIN" as described. All uPVC branches,Tees,reducing Tees,reducers etc. are to be formed in accordance to the manufacturer's printed instruction. The installations to have the various sizes of connectors, adaptors,sockets,reducers holdbats, clips etc. as required for satisfactory functions.

B2.01	100mm bore Heavy duty golden brown pipes	Lm	42		
B2.02	100mm bore Heavy duty grey pipes	Lm	42		
B2.03	50mm bore Heavy duty waste pipes	Lm	50		
B2.04	40mm Ditto	Lm	36		
B2.05	32mm Ditto	Lm	30		
B2.06	100mm Access bend	No.	10		
B2.07	50mm Ditto	No.	12		
B2.08	40mm Ditto	No.	12		

Item	Description	Units	total	Rates (Kshs.)	Costs (Kshs)
B2.09	32mm Ditto	No.	12		
B2.10	100mm Tee	No.	6		
B2.11	50mm Tee	No.	6		
B2.12	40mm Ditto	No.	6		
B2.13	32mm Ditto	No.	5		
B2.14	100mm Ditto	No.	28		
B2.15	50mm Ditto	No.	24		
B2.16	40mm Ditto	No.	12		
B2.17	32mm Ditto	No.	12		
B2.18	100mm diameter Vent cowl and Weathering slate to suite 100mm pvc pipe	No.	16		

Item	Description	Units	total	Rates (Kshs.)	Costs (Kshs)
B2.19	100 x 50 x 40 mm 4 way floor trap	No.	50		
B2.20	Channel Drains	No.	2		
B2.21	40x100mm Boss connectors	No.	4		
B2.22	50x100mm ditto	No.	3		
B2.23	100mm diameter gulley trap c/w chamber and mild steel grating	No.	5		
B2.24	Standard Manhole 600 x 450mm complete with medium duty manhole covers and rings	No.	7		
B2.25	Allow for connection from the first manholes	No.	1		
B2.26	Allow for connection fof labaratory system	No.	1		
B2.27	**Total for internal Foul drainage c/f to price collection page**				

Item	Description	Units	total	Rates (Kshs.)	Costs (Kshs)

Price Collection Page

B1	Plumbing works	
B2	Internal Foul Drainage	
B3	Contigency Sum	150,000
B4	**Total for Plumbing & Drainage c/f Price Summary Page**	

C Rain water Drainage works

Supply and install the following in Wavin ED Tech soil and waste systems to quality standards (EN 1451,DIN 4102-B2) with fittings fixed in accordance to the manufacturer's printed instructions and manufactured by "KEY TERRAIN" as described. All Wavin ED Tech branches,Tees,reducing Tees,reducers etc. are to be formed in accordance to the manufacturer's printed instruction. The installations to have the various sizes of connectors, adaptors,sockets,reducers holdbats, clips, covers, gratings etc. as required for satisfactory functioning.

C1.01	150mm socketed drainage pipe	LM	0		
C1.02	100mm ditto	LM	300		
C1.03	75mm ditto	No.	0		
C1.04	100mm Bend	No.	40		
C1.05	75mm ditto	No.	0		
C1.06	100mm Tee	No.	40		
C1.07	75mm ditto	No.	0		
C1.08	100mm full bora	No.	40		
C1.09	75mm ditto	No.	0		
C1.10	100mm socketed union	No.	150		
C1.11	75mm ditto	No.	240		
C1.12	contigency	Item			150,150
C1.13	**Total for rainwater drainage work c/f to price collection page**				

D Solar water heating system - SUPPLY AND INSTALL

The Contractor shall supply material & labour and supply, deliver, install, fix, connect, test, label and commission the works, clean, complete and working to every detail as described in the specifications and on the drawings to the satisfaction of the Consulting Engineers. The bidder must allow for repair of any damage incured in the course of their works.

The Contractor shall suppy and install solar panels as described below: The bidder must allow for repair of any damages incured in the course of their works.

Ablution Block Solar Water Heating system

Item	Description	Unit	Qty	Rates (Kshs.)	Cost (Kshs.)
D1.01	**Solar Panel:** 2.3sqm each solar panel complete withinsulation, absorber coating is an anodised black nickel selective surface, especially at high operating temperature standard. 24g G.I sheet cladding with inlet and outlet fitting Brass interconters for solar panels. 1No. Automatic Air- vent.Stands for solar panels and any other necessary accessories.	No	44		
D1.02	**Solar water Tank:**1,500Lts solar water heat tanks Dim 1116ø x 2250 height. Non pressure with floating ball. Inner tank material: SUS304-2B, 0.8mm thickness. Outer tank material: stainless 201,0.6mm thickness. Insulation material: PU,50mm thickness c/w all accessories.	No.	1		
D1.03	**Solar water Tank:2**,000Lts solar water heat tanks Dim 1272ø x 2500 height. Non pressure with floating ball. Inner tank material: SUS304-2B, 0.8mm thickness. Outer tank material: stainless 201,0.6mm thickness. Insulation material: PU,50mm thickness c/w all accessories.	No.	2		
D1.04	Pipework connection around the panel to the cylinder in the location mapped on the drawing complete with all the valves and other accessories. Please specify the type of pipe on the layout	Item	1		
D1.05	**Collector side** high performance hot water 3-speed circulator pump as Grundfos Alpha2 25-60 complete with connections to the pipework. The pump to be controlled by differential temperature sensor.	No	2		
D1.06	Allow for electrical connections from the nearest power source. This includes RCBO protection, 20Amp DP control switch with neon indicator, wiring and conduiting. It should also include protection against power fluctuation.	Item	1		

Item	Description	Unit	Qty	Rates (Kshs.)	Cost (Kshs.)
D1.07	Differential Temperature controller with sensor located at the top of the collector (hottest point) and the bottom of the storage tank (Coldest point). This is to operate the circulating pump to come on at preset temperature differential.	No	1		
D1.08	**Water supply side** high performance hot water 3-speed circulator pump as Grundfos Alpha2 25-60 complete with connections to the pipework. The pump to be controlled by differential temperature sensor.	No	1		
D1.09	Allow for electrical connections from the nearest power source. This includes RCBO protection, 20Amp DP control switch with neon indicator, wiring and conduiting. It should also include protection against power fluctuation.	Item	1		
D1.10	Sum for Completion documents (***Three hardcopies in scale1: 100, a pdf copy and a CAD copy):*** Comprising Workshop drawings, manufacturer's technical product catalogues, users manuals, maintenance manuals, as installed drawings, test certificates, etc. ***{ NOTE: Penultimate Valuation will not be paid until these are fully availed & signed off by the engineer }***	Item	1		
D1.11	Sum for testing, system configuration & commissioning of the entire installations set complete with all accessories, interconnections, controls and the necessary programing.	Item	1		
D1.12	Sum for 6 months comprehensive maintenance (Consumable, parts and labour) from date of practical completion.	Item	1		
D1.13	Contigency	Item	1		342,500
D1.14	**Total for Ware House Without VAT**				

E WAREHOUSE FIRE FIGHTING

E1 PORTABLE FIRE EXTINGUISHER INSTALLATIONS

Supply, deliver and install the following fire fighting equipment (stored in vandal proof protective cabinets) manufactured to NFPA 10 and are in themselves something of established standard for quality around the world

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
E1.01	4.5kg CO_2 gas fire extinguisher	No	10		
E1.02	9 litre Foam fire extinguisher	No	10		
E1.03	9 Kg DCP fire extinguisher	No	10		
E1.04	9 Kg H2O fire extinguisher	No	10		
E1.05	Self Activating Fire Extinguishing Ball with Build-in Fire Alarm	No	7		
E1.06	**Total for portable Fire Extinguishers c/f to price Collection page**				**459,600**

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)

E2 SPRINKLER PUMP ,EQUIPMENTS & INSTALLATIONS

	*Supply, deliver and install the Following fire pressure set and the accessories as descride below.T***he pump and all the acessories must be ULlisted and/or FM approved.**				
E2.01	**UL listed/ FM Approved Splinkler Fire fighting Pump set comprising of :** **1No. Diesel driven Pump** to NFPA 20 Standard. The pump to be capable of delivering 56 L/S against pressure of 25bar (minmum) complete with isolating valves, non-return valves strainers, pressure gauges, engine, 200 litre Diesel storage tank full of diesel and automatic Engine starting Mechanism to be comnected to the control panel **Diesel Fire Pump Controllers** shall be designed to control and monitor the fire pumps, fulfilling the requirements described by the fire-pump controller standards. The fire-pump controllers must be certified by FM- Factory Mutual/ UL- Underwriters Laboratories.The fire-pump controllers monitor the operation status and in the case of fire, the controller will receive a signal from the pressure switch and start the fire-pump. Fire controllers shall be wired fail-safe, and in the event of any control cable becoming loose will start the fire pumps. The controllers shall operate the pumps in an automatic on / manual off condition. Once the fire pump has started via the controller, shall not stop until it is manually shut down.	set	1		
	1No. Electrically driven Pump to NFPA 20 Stanadards. The pump to be capable of delivering 56L/S against pressure of 25bar (minmum) complete with isolating valves, non-return valves, strainers, pressure gauges and automatic Engine starting Mechanism to be comnected to the control panel **Electric Fire Pump Controllers** shall be designed to control and monitor the fire pumps, fulfilling the requirements described by the fire-pump controller standards. The fire-pump controllers must be certified by FM- Factory Mutual/ UL- Underwriters Laboratories.The fire-pump controllers monitor the operation status and in the case of fire, the controller will receive a signal from the pressure switch and start the fire-pump. Fire controllers shall be wired fail-safe, and in the event of any control cable becoming loose will start the fire pumps. The controllers shall operate the pumps in an automatic on / manual off condition. Once the fire pump has started via the controller, shall not stop until it is manually shut down.				

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
	2No, Electrically driven Jockey pump to NFPA 20 Stanadards.Capable of delivering 5.6 l/s at set pressure of 26bars each (minimum) complete with isolating valves, non-return valves, strainers, pressure gauges and automatic Engine starting Mechanism to be comnected to the control panel Jocky Fire Pump Controllers shall be designed to control and monitor the fire pumps, fulfilling the requirements described by the fire-pump controller standards. The fire-pump controllers must be certified by FM- Factory Mutual/ UL- Underwriters Laboratories.The fire-pump controllers monitor the operation status and in the case of fire, the controller will receive a signal from the pressure switch and start the fire-pump. Fire controllers shall be wired fail-safe, and in the event of any control cable becoming loose will start the fire pumps. The controllers shall operate the pumps in an automatic on / manual off condition. Once the pressure drop the duty jockey pump shall stary and in event it is unable build up pressure the system shall start automatically shall not stop until it is manually shut down.				
	The set shall be factory assembled and all parameters set from the factory including panels integration with all the accessories. The system shall be BMS ready on Modbus/Bacnet TCP-IP open protocol				
	2500litres diaphragm pressure vessel rated 25bar	No	2		
E2.02	UL listed/FM approved Sprinkler system installation control valve of wet system type, complete with stop valve, alarm valve, combine drain and test valve , pressure guages, alarm motor stop valve, strainers, alarm motor and gong, or equal approved.	No	4		

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
	Sprinkler pumps pressure switch with the drain cork and pressure gauge	No	5		
E2.03	Low level Float switch	No	1		
	100mm pressure guages	No	3		
	Electrical connection from the isolator to the control panel and from control to electric motor including cabling and conduiting	No	1		
	UL listed Closed head conventional pattern pendant sprinkler head with universal deflector and quartzoid bulb. K-factor 80	No	2750		
E2.04	UL listed spare closed head conventional pattern pendant sprinkler head with universal deflector and quartzoid bulb. K-factor 80	No	275		
	Sprinkler accessories cabinates complete with sprinkler wrenches and spanners	No	1		
	UL listed/Fm Approved 200mm diameter check valve as GLENFIELD incorporating strainer and flanges	No	2		

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
	UL listed/Fm Approved 200mm diameter check valve as GLENFIELD incorporating flanges	No	12		
E2.05	UL listed/Fm Approved 200mm diameter Monitored butterfly valve as GLENFIELD incorporating flanges	No	18		
	150mm Ditto	No	18		
	UL listed/Fm Approved 100mm diameter butterfly valve as GLENFIELD incorporating flanges	LM	102		
	75mm Ditto	LM	5		

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
Supply, deliver, install test and commisstion and paint the appropriate colour code (signal red) the following fire fighting pipe work. Materials for piping and the standards covering these installations shall be as described in NFPA 13. Black or galvanized steel pipe shall be either ASTM A 53 seamless grooved for pipe bigger than 65mm while 50mm and below to be electric welded, Grade A or B. The Pipe shall be Schedule 40 and above. ***All valves, pressure gauges, pressure switches, meters and any othe accessories must be ULlisted and/or FM approved.***					
E2.06	200mm Diameter tubing in wall and ceiling Complete with couplings	LM	634		
E2.07	150mm Ditto	LM	2086		
E2.08	100mm Ditto	LM	843		
E2.09	75mm Ditto	LM	3526		
E2.10	65mm Ditto	LM	0		
E2.11	50mm Ditto	LM	616		
E2.12	40mm Ditto	LM	584		
E2.13	32mm Ditto	LM	634		
E2.14	25mm Ditto	LM	326		
E2.15	150 x 150 x 150 x 150mm Cross Tee	No	6		
E2.16	100 x 100 x 100 x 100mm Cross Tee	No	6		

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
E2.17	150 x 150 x 150mm Tee	No	4		
E2.18	100 x 100 x 75mm Ditto	No	0		
E2.19	100 x 100 x65mm Ditto	No	0		
E2.20	100 x 100 x 50mm Ditto	No	66		
E2.21	75mm Equal Tee	No	360		
E2.22	65mm Ditto	No	0		
E2.23	50mm Ditto	No	180		
E2.24	40mm Ditto	No	180		
E2.25	32mm Ditto	No	360		
E2.26	25mm Ditto	No	60		
E2.27	150 x100mm reducer	No	8		
E2.28	100x 75mm Ditto	No	280		
E2.29	100x 65mm Ditto	No	0		

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
E2.30	100x 50mm Ditto	No	280		
E2.31	100x40mm Ditto	No	290		
E2.32	75x 65mm Ditto	No	0		
E2.33	75x 50mm Ditto	No	120		
E2.34	65x 50mm Ditto	No	0		
E2.35	50x 40mm Ditto	No	240		
E2.36	50x 32mm Ditto	No	0		
E2.37	50x 25mm Ditto	No	60		
E2.38	40x 32mm Ditto	No	240		
E2.39	40x 25mm Ditto	No	140		
E2.40	32x 25mm Ditto	No	60		
E2.41	25x 20mm Ditto	No	1375		
E2.42	150mm Bend	No	10		

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
E2.43	100mm Ditto	No	192		
E2.44	75mm Ditto	No	24		
E2.45	65mm Ditto	No	0		
E2.46	50mm Ditto	No	40		
E2.47	40mm Ditto	No	16		
E2.48	32mm Ditto	No	24		
E2.49	25mm Ditto	No	12		
E2.50	20mm plugs with 15mm threaded screws for sprinkler heads	No	275		
E2.51	150mm flanges	No	16		
E2.52	100mm Ditto	No	30		
E2.53	75mm Ditto	No	60		

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
E2.54	Pipe Hangers As Hira walraven,Ul Listed,BIS Heavy Duty Industrial Clamps, 5" Locking Bolts, HD1501 (M8/10, M10/12 (cat No. BUP 1000),BIS Rubber Lined Split Clamp,All hangers to be sound insulating as DN 4109, and 800mm raw bolt. All the hangers to be equaly spaced at a distance of 600mm.for the entire length of the pipeline				
E2.55	200mm Diameter tubing in wall and ceiling as desribed above	No	211		
E2.56	150mm ditto	No	695		
E2.57	100mm Ditto	No	281		
E2.58	75mm Ditto	No	1175		
E2.59	65mm Ditto	No	0		
E2.60	50mm Ditto	No	205		
E2.61	40mm Ditto	No	370		
E2.62	32mm Ditto	No	875		
E2.63	25mm Ditto	No	55		

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
E2.64	Sprinkler system flow switch and drain	No	1		
E2.65	Allow for painting to Engineers requirement and colour coding to BS 1710: 1984 (1991).	item	1		
E2.66	Allow for testing the heads of the Sprinkler installation system during progress of the works and again at the completion to the satisfaction of the Engineer and the Local Authority	Item	1		
E2.67	Testing and Commissioning	item	1		
E2.68	Allow for other items not listed above but necessary for the correct and satisfactory functioning of the sprinkler system (please Specify here Below)	item	1		
E2.69	Contigency	item	1		3,500,000.00
E2.70	**Total for sprinkler pumps & Equipments c/f to Price Collection page**				

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
E3	**WET RISER AND HOSEREEL INSTALLATIONS**				
	Supply, deliver and install the Following fire pressure set and the accessories as descride below.T **he pump and all the acessories must be ULlisted and/or FM approved.**				
E3.01	**UL listed/ FM Approved Hydrant Fire fighting Pump set comprising of :** **1No. Diesel driven Pump** to NFPA 20 Stanadards. The pump to be capable of delivering 40 L/S against pressure of 20bar complete with isolating valves, non-return valves, strainers, pressure gauges, engine, 200 litre Diesel storage tank full of diesel and automatic Engine starting Mechanism to be comnected to the control panel **Diesel Fire Pump Controllers** shall be designed to control and monitor the fire pumps, fulfilling the requirements described by the fire-pump controller standards. The fire-pump controllers must be certified by FM- Factory Mutual/ UL- Underwriters Laboratories.The fire-pump controllers monitor the operation status and in the case of fire, the controller will receive a signal from the pressure switch and start the fire-pump. Fire controllers shall be wired fail-safe, and in the event of any control cable becoming loose will start the fire pumps. The controllers shall operate the pumps in an automatic on / manual off condition. Once the fire pump has started via the controller, shall not stop until it is manually shut down.	set	1		

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
	1No. Electrically driven Pump to NFPA 20 Stanadards. The pump to be capable of delivering 40 L/S against pressure of 2.2MPa (minmum) complete with isolating valves, non-return valves, strainers, pressure gauges and automatic Engine starting Mechanism to be comnected to the control panel **Electric Fire Pump Controllers** shall be designed to control and monitor the fire pumps, fulfilling the requirements described by the fire-pump controller standards. The fire-pump controllers must be certified by FM- Factory Mutual/ UL- Underwriters Laboratories.The fire-pump controllers monitor the operation status and in the case of fire, the controller will receive a signal from the pressure switch and start the fire-pump. Fire controllers shall be wired fail-safe, and in the event of any control cable becoming loose will start the fire pumps. The controllers shall operate the pumps in an automatic on / manual off condition. Once the fire pump has started via the controller, shall not stop until it is manually shut down.				
	1No, Electrically driven Jockey pump to NFPA 20 Stanadards.Capable of delivering 4 l/s at set pressure of 2.2MPa bars each (minimum) complete with isolating valves, non-return valves, strainers, pressure gauges and automatic Engine starting Mechanism to be comnected to the control panel Jocky Fire Pump Controllers shall be designed to control and monitor the fire pumps, fulfilling the requirements described by the fire-pump controller standards. The fire-pump controllers must be certified by FM- Factory Mutual/ UL- Underwriters Laboratories.The fire-pump controllers monitor the operation status and in the case of fire, the controller will receive a signal from the pressure switch and start the fire-pump. Fire controllers shall be wired fail-safe, and in the event of any control cable becoming loose will start the fire pumps. The controllers shall operate the pumps in an automatic on / manual off condition. Once the pressure drop the duty jockey pump shall stary and in event it is unable build up pressure the system shall start automatically shall not stop until it is manually shut down.				

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
	The set shall be factory assembled and all parameters set from the factory including panels integration with all the accessories. The system shall be BMS ready on Modbus/Bacnet TCP-IP open protocol				
E3.02	2500litres diaphragm pressure vessel rated 20bar	No	2		
E3.03	UL listed/FM approved hydrant system installation control vavle of wet system type, complete with stop valve, alarm valve, combine drain and test valve , pressure guages, alarm motor stop valve, strainers, alarm motor and gong, or equal approved.	No	1		
E3.04	pumps pressure switch with the drain cork and pressure gauge	No	5		
E3.05	Low level Float switch	No	3		
E3.06	150mm pressure guages	No	3		
E3.07	Electrical connection from the isolator to the control panel and from control to electric motor including cabling and conduiting	Item	1		
E3.08	UL listed/Fm Approved 150mm diameter check valve as GLENFIELD incorporating strainer and flanges	No	2		

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
E3.09	UL listed/Fm Approved 150mm diameter check valve as GLENFIELD incorporating flanges	No	12		
E3.10	UL listed/Fm Approved 150mm diameter Monitored butterfly valve as GLENFIELD incorporating strainer and flanges	No	6		
E3.11	150 mm Water flow indicator	No.	6		
E3.12	Ul Listed 65mm dry riser Landing valve c/w dry riser landing valve box with standard label and chain cap	No.	10		
E3.13	UL listed Hose and crandle; 30m long x64mm bore collapsible flat hose pipe with swinging angle of 180^{o} complete with Nozzle.	No.	10		
E3.14	Fire hydrant box	No.	10		

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
	Supply, deliver, install test and commisstion and paint the appropriate colour code (signal red) the following fire fighting pipe work. Materials for piping and the standards covering these installations shall be as described in NFPA 13. Black or galvanized steel pipe shall be either ASTM A 53 seamless grooved for pipe bigger than 65mm while 50mm and below to be electric welded, Grade A or B. The Pipe shall be Schedule 40 and above. ***All valves, pressure gauges, pressure switches, meters and any othe accessories must be ULlisted and/or FM approved.***				
E3.15	150mm Diameter tubing in wall and ceiling Complete with couplings	LM	880		
E3.16	100mm Ditto	LM	360		
E3.17	150 x 150 x 150mm Tee	No	2		
E3.18	150 x 150 x 100mm Tee	No	37		
E3.19	150 x100mm reducer	No	37		
E3.20	100x 75mm Ditto	No	0		
E3.21	100x 65mm Ditto	No	0		

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
E3.22	100x 50mm Ditto	No	20		
E3.23	50x 25mm Ditto	No	20		
E3.24	25x 20mm Ditto	No	20		
E3.25	150mm Bend	No	38		
E3.26	100mm Ditto	No	25		
E3.27	75mm Ditto	No	18		
E3.28	65mm Ditto	No	0		
E3.29	50mm Ditto	No	54		
E3.30	25mm Ditto	No	72		

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
E3.31	150mm flanges	No	440		
E3.32	100mm Ditto	No	28		
E3.33	75mm Ditto	No	72		
E3.34	Pipe Hangers As Hira walraven,Ul Listed,BIS Heavy Duty Industrial Clamps, 5" Locking Bolts, HD1501 (M8/10, M10/12 (cat No. BUP 1000),BIS Rubber Lined Split Clamp,All hangers to be sound insulating as DN 4109, and 800mm raw bolt. All the hangers to be equaly spaced at a distance of 600mm.for the entire length of the pipeline				
E3.35	150mmDiameter tubing in wall and ceiling as desribed above	No	293		
E3.36	100mm Ditto	No	120		
E3.37	75mm Ditto	No	1		
E3.38	65mm Ditto	No	12		

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
E3.39	50mm Ditto	No	12		
E3.40	40mm Ditto	No	0		
E3.41	32mm Ditto	No	0		
E3.42	25mm Ditto	No	7		
E3.43	hydrantr system flow switch and drain	No	1		
E3.44	Allow for painting to Engineers requirement and colour coding to BS 1710: 1984 (1991).	item	1		
E3.45	Allow for testing the heads of the Sprinkler installation system during progress of the works and again at the completion to the satisfaction of the Engineer and the Local Authority	Item	1		
E3.46	Testing and Commissioning	item	1		
E3.47	Allow for other items not listed above but necessary for the correct and satisfactory functioning of the sprinkler system (please Specify here Below)	item	1		

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
E4	**HOSEREEL INSTALLATIONS**				
E4.01	50mm gate valve as Pegler	No	20		
E4.02	25mm Ditto	No	20		
E4.03	50mm pipe union	No	20		
E4.04	25mm Ditto	No	20		
E4.05	25mm nipples	No	20		
E4.06	20mm nipples	No	20		
E4.07	Automatic, recessed swing type hosereel . Hosereel shall have the following characteristics - Full 180 degree swing, delivery valve 25mm BSP inlet 25mmx30m long hose pipe -Mild steel feed pipe to BS1387 class "B." The fire hosereel must be UL listed/FM approved	No.	20		
E4.08	Allow for painting to Engineers requirement and colour coding to BS 1710: 1984 (1991).	item	1		
E4.09	Allow for testing the heads of the Sprinkler installation system during progress of the works and again at the completion to the satisfaction of the Engineer and the Local Authority	Item	1		
E4.10	Testing and Commissioning	item	1		
E4.11	Allow for other items not listed above but necessary for the correct and satisfactory functioning of the sprinkler system (please Specify here Below)	item	1		
E4.12	Contigency	item	1		1,200,000
E4.13	**Total for hydrant and hosereels system c/f to price Collection page**				

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
	Price Collection Page				
E1	Sub total for Portable fire Extinguisher				
E2	Sub total for Water Sprinkler installations				
E3	Sub total for Water Hydrant and Hose reel installations				
E4	**Total Cost of for warehouseTo Price Summary Page**				

sanitary supply and fix,plumbing,internal drainage and solar water heating for warehouse summary

Item	Description	Cost (kshs)
1	Sanitary ware supply and fix	
2	Internal plumbing and drainage	
3	Rain Water	
4	Solar Water Heating	
5	Fire fighting	
6	**Total for sanitary,plumbing,drainage,rainwater & firefighting Without VAT c/f to Grand Price Summary**	

External site water reticulation for warehouse summary

Item	Description	Cost (kshs)
1	Water reticulation	
2	**Total for water reticulationWithout VAT c/f to Grand Price Summary**	

BILL 2

OFFICE BLOCK

PLUMBING,DRAINAGE & FIRE FIGHTING

SHELL & CORE INSTALLATIONS

F SANITARYWARE & FITTINGS -OFFICE BLOCK C&S

Sanitaryware & Fittings including all materials and jointings, waste and overflow pipe fittings:- Note all sanitary fittings are coloured to project architect specific colour.

Item	Description	Units	Qty	Rates (Kshs.)	Supply Costs (Kshs)
F1.01	**WC Suits:** Duravit D-Code floor back to wall washdown model horizontal outlet model-N0. 221009..00 (white in colour), accessory are toilet seat and cover without softclose automatic closure, hinges stainless steel Model No. 0067310000 with all fixing included, complete with docol WC concealead flushvalve, bend connectorbend connector. or equal and approval	No.	67		
F1.02	**Disabled suite:** Water closet pan Close-coupled as Twyford-doc.m Value Pack with white grab rails cat no. PK8184WH horizontal outlet. Doc.M value cistern, fittings and standard lever, Doc.M seat ring,stainless steel hinge,Hand rinse with no overflow, no chainstay ,Spray mixer, lever operated mixing valve -thermostatic TMV3 . Doc.M support rail (5 required). Doc.M hinged support rail and toilet roll holder. Wall hangers(pair), Grid waste, pan fixings, cistern cover clips, P trap outlet connector Cat.No WF1240WH.	No.	6		
F1.03	**Toilet roll holder:** Duravit D-Code toilet roll holder cat no. #009926 bend connector. orr equal and approval	No.	73		
F1.04	**Toilet brush Holder:** Duravit D-Code toilet brush cat no. #009927 bend connector. orr equal and approval	No.	73		

Item	Description	Units	Qty	Rates (Kshs.)	Supply Costs (Kshs)
F1.05	**Wash hand basin:** Duravit D-Code vanity countertop basin 545mm, with overflow,with tap platform Model No. 033754..00 (white in colour) with a fixing, complete with one Non Conculsive time delay tapis or docol basin tap, chrome plated waste Ø 32mm and chrome plate bottle trap. Angle valves and any other necessary accessories.bend connector. or equal and approval	No.	80		
F1.06	**Mirror:** 900x600mm silver plated plain glass mirror with bevelled edges and fixed with chrome plated screws and dome shaped cover or equal and approval	No.	80		
F1.07	**Coat Hooks:** Duravit Coat hooks. EQUIVALENT AS	No.	73		
F1.08	**Soap dispenser:** Press type Liquid soap dispenser made out of enamal coat mild steel as Mediclinic or equal and approval	No.	36		
F1.09	**Hand driers:** No Touch Vandal Resistance Automatic Hand drier as Mediclinic or equal and approval	No.	36		
F1.10	**Urinal bowl:** Urinal bowls as Duravit D-code cat no. 082930007 complete with dividers, 32mm Chrome plated hinged domed outlet grating, 32mm chrome plated urinal bottle-trap, Complete with a Concealed flush valve as Rocca Model or Equal and approved	No	18		

Item	Description	Units	Qty	Rates (Kshs.)	Supply Costs (Kshs)
F1.11	**Urinal sensor as Geberit:** sensor flush valve for urinal HyTronic Cat. No. 115.802.HC.1	No	18		
F1.12	**Electronic air fresheners** Automatic air freshener dispensing system and odor neutralizing to control an area more than 800 cuft refills lasting upto 100days, with proactive display to indicate refill or batteries need replacemen as mediclinic dispenser with timer & sensor or equal and approval	No	21		
F1.13	**Paper towel dispensers** Decorative wall mounted paper towel dispensers 230mm high, 300 mm wide and 100mm deep with easy tear holder and a spring loaded mechanism to release one sheet per pull. Removable lid and opens sides for towel level viewing and easy refilling complete with all accessories including a foot operated stainless steel disposed towel bin with cover (300mm high and 300mm diameter) as Mediclinic or equal and approval	No	21		
F1.14	**Utility /Cleaners sink:** Utility basin as stark 3 without oveflow, without tap platform,with grid chrome dimensions of 480x425mm Model No. 031348..00 (white in colour) and all accessory as grid,chrome,fixing Model No. 0050011000., include with grating cat No. FC1034WH, Bib tap as tapis or equal and approval	No.	7		

Item	Description	Units	Qty	Rates (Kshs.)	Supply Costs (Kshs)
F1.15	**Kitchen Sink:** Single bowl single drainer Stainless Steel kitchen sink c/w chrome plated 1½" chrome plated bottle trap, 40mm chrome plated chain waste fitting(unslotted) and kitchen sink mixer as wall type cat no. EX5002/CH or equal and approval	No.	6		
F1.16	**Instant Kitchen Water heater:** Undersink instantaneous heater of capacity 10litres and rating 3kw complete with adjustable thermostat, 40'C temperature lock,standard spout and valve, taps, mixer and any other necessary accessories as ariston or equal and approval	No.	6		
F1.17	Contigency				700,000
F1.18	**Total for sanitaryware & fittings c/f to price collection page**				

PLUMBING & DRAINAGE

G Plumbing Works - OFFICE BLOCK

Lead free ASTM uPVC Solvent Weld Plumbing System (ASTRAL Aquariuys) cold water & Lead free CPVC Solvent Weld Plumbing System (ASTRAL FLOWGUARD) hotwater pipework systems with fittings fixed and welding to be in accordance to the manufacturer's printed instructions as described. All uPVC & CPVC bends,Tees,reducing Tees,reducers etc. are to be formed in accordance to the manufacturer's printed instructions. The installations to have the various sizes of connectors, adaptors, sockets, reducers, holdbats, clips/brackets etc. as required for satisfactory functions. NOTE: The pipe diameters given are internal

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
G1.01	15mm bore water pipes	Lm	35		
G1.02	20mm Ditto	Lm	53		
G1.03	25mm Ditto	Lm	30		
G1.04	32mm Ditto	Lm	67		
G1.05	40mm Ditto	Lm	35		
G1.06	50mm Ditto	Lm	44		
G1.07	65mm Ditto	Lm	27		
G1.08	15mm Bends and Elbows	No	13		
G1.09	20mm Ditto	No	36		
G1.10	25mm Ditto	No	18		
G1.11	32mm Ditto	No	36		
G1.12	40mm Ditto	No	16		

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
G1.13	50mm Ditto	No	16		
G1.14	65mm Ditto	No	14		
G1.15	65mm Tee	No	7		
G1.16	50mm Tee	No	16		
G1.17	40mm Ditto	No	14		
G1.18	32mm Ditto	No	36		
G1.19	25mm Ditto	No	18		
G1.20	20mm Ditto	No	36		
G1.21	15mm Ditto	No	13		
G1.22	65x50mm Ditto Reducers	No	4		
G1.23	50x40mm Ditto	No	19		
G1.24	50x32mm Ditto	No	18		
G1.25	50x25mm Ditto	No	5		
G1.26	50x20mm Ditto	No	0		
G1.27	40x32mm Ditto	No	18		

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
G1.28	40x25mm Ditto	No	6		
G1.29	40x20mm Ditto	No	1		
G1.30	32x25mm Ditto	No	9		
G1.31	25x20mm Ditto	No	9		
G1.32	25x15mm Reducer	No	0		
G1.33	20x15mm Ditto	No	9		
G1.34	65mm Gate valves as peglar	No	1		
G1.35	50mm non-return valve as Pegler	No	12		
G1.36	40mm Ditto	No	10		
G1.37	32mm Ditto	No	10		
G1.38	25mm Ditto	No	0		
G1.39	20mm Ditto	No	0		
G1.40	15mm Ditto	No	0		
G1.41	50mm ballvalves	No	2		
G1.42	50mm pipe sockets	No	22		

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
G1.43	40mm Ditto	No	7		
G1.44	32mm Ditto	No	18		
G1.45	25mm Ditto	No	9		
G1.46	20mm Ditto	No	26.5		
G1.47	15mm Ditto	No	17.5		
G1.48	15mm x 300mm long flexible connector complete with chrome plated stop cocks.	No	173		
G1.49	20mm x 300mm long flexible connector complete with chrome plated stop cocks.	No	12		
G1.50	15mm Water stand pipe c/w Locable Bip taps	No	3		

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
G1.51	**POTABLE WATER TANK** 80.000Lts capacity tank overall size: 5,000 Length, 4,000 breadth, 2,000high, located in the roof.Tank to be sectional steel potable water storage build from pressed steel panels 1.0m square bolted together complete with sealed taps, access cover, drain cocks, painted two coats in,ide and outside after assembly, including all hoisting and placing on suitable support beams in the roof as shown on the Contract Drawings. The tank shall have provision for 2No. 50mm outlet, 40mm supply pipe, 65mm overflow, 15mm warning pipe 100mm washout internal and external ladder and water level indicator	No	1		
G1.52	NCC Check meters	Item	1		
G1.53	32mm Float switch	Item	0		
G1.54	Allow for connection to the water supply from the Local Authority	Item	1		
G1.55	**Total for Plumbing works c/f to price collection page**				

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)

G2 Internal Foul Drainage

PVC Drain waste & Vent system (ASTRAL DWV) for non pressure drainage & Sewerage application. Soil and waste systems to BS 4514 and 5225 with fittings fixed in accordance to the manufacturer's printed instructions and BS 5572 and manufactured by "KEY TERRAIN" as described. All uPVC branches,Tees,reducing Tees,reducers etc. are to be formed in accordance to the manufacturer's printed instruction. The installations to have the various sizes of connectors, adaptors,sockets,reducers holdbats, clips etc. as required for satisfactory functions.

G2.01	150mm bore Heavy duty grey pipes	Lm	30		
G2.02	100mm bore Heavy duty golden brown pipes	Lm	50		
G2.03	100mm bore Heavy duty grey pipes	Lm	113		
G2.04	50mm bore Heavy duty waste pipes	Lm	80		
G2.05	40mm Ditto	Lm	48		
G2.06	32mm Ditto	Lm	30.3		
G2.07	150mm Access bend	No.	5		
G2.08	100mm Access bend	No.	18		
G2.09	50mm Ditto	No.	9		
G2.10	40mm Ditto	No.	9		
G2.11	32mm Ditto	No.	12		
G2.12	150mm Tee	No.	0		

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
G2.13	100mm Tee	No.	50		
G2.14	50mm Tee	No.	15		
G2.15	40mm Ditto	No.	20		
G2.16	32mm Ditto	No.	18		
G2.17	150mm Inspection plug	No.	2		
G2.18	100mm Ditto	No.	32		
G2.19	50mm Ditto	No.	19		
G2.20	40mm Ditto	No.	16		
G2.21	32mm Ditto	No.	18		
G2.22	100mm diameter Vent cowl and Weathering slate to suite 100mm pvc pipe	No.	6		
G2.23	100 x 50 x 40 mm 4 way floor trap	No.	31		
G2.24	Channel Drains	No.	0		

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
G2.25	40x100mm Boss connectors	No.	15		
G2.26	50x100mm ditto	No.	15		
G2.27	Floor drain RC 250x250 complete with grease strainer	No.	0		
G2.28	Greaes trap 600x600	No.	0		
G2.29	100mm diameter gulley trap c/w chamber and mild steel grating	No.	5		
G2.30	Standard Manhole 600 x 450mm complete with medium duty manhole covers and rings	No.	5		
G2.31	Allow for connection from the first manholes	1	1		
G2.32	**Total for internal Foul drainage c/f to price collection page**				

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)

Price Collection Page

G1	Plumbing works	
G2	Internal Foul Drainage	
G3	Contigency Sum	88,586
G4	**Total for Plumbing & Drainage c/f Price collection Page**	

H Rain water Drainage works

Supply and install the following in Wavin ED Tech soil and waste systems to quality standards (EN 1451,DIN 4102-B2) with fittings fixed in accordance to the manufacturer's printed instructions and manufactured by "KEY TERRAIN" as described. All Wavin ED Tech branches,Tees,reducing Tees,reducers etc. are to be formed in accordance to the manufacturer's printed instruction. The installations to have the various sizes of connectors, adaptors,sockets,reducers holdbats, clips, covers, gratings etc. as required for satisfactory functioning.

H1.01	150mm socketed drainage pipe	LM	20		
H1.02	100mm ditto	LM	300		
H1.03	75mm ditto	No.	0		
H1.04	100mm Bend	No.	40		
H1.05	75mm ditto	No.	0		
H1.06	100mm Tee	No.	40		
H1.07	75mm ditto	No.	0		
H1.08	100mm full bora	No.	40		
H1.09	75mm ditto	No.	0		
H1.10	100mm socketed union	No.	150		
H1.11	75mm ditto	No.	240		
H1.12	Contigency	Item			153,750
H1.13	**Total For Rain water Drainage C/F to price collection Page**				

I FIRE FIGHTING INSTALLATIONS

I PORTABLE FIRE EXTINGUISHER INSTALLATIONS

Supply, deliver and install the following fire fighting equipment (stored in vandal proof protective cabinets) manufactured to BS EN3 and are in themselves something of established standard for quality around the world

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
I1.01	4.5kg CO_2 gas fire extinguisher	No	28		
I1.02	9 litre Foam Ditto	No	28		
I1.03	9 Kg DCP Ditto	No	28		
I1.04	9 Kg H2O Ditto	No	28		
I1.05	Fire blanket	No	6		
I1.06	Contigency	No	1		40,000
I1.07	**Total for portable Fire Extinguishers c/f to price Collection page**				

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)

I2 WATER SPRINKLER INSTALLATIONS

Supply, deliver, install test and commisstion and paint the appropriate colour code (signal red) the following fire fighting pipe work. Materials for piping and the standards covering these installations shall be as described in NFPA 13. Black or galvanized steel pipe shall be either ASTM A 53 seamless grooved for pipe bigger than 65mm while 50mm and below to be electric welded, Grade A or B. T ***he Pipe shall be Schedule 40 and above. All valves, pressure gauges, pressure switches, meters and any othe accessories must be ULlisted and/or FM approved.***

I2.01	UL Listed Closed head conventional pattern pendant sprinkler head with universal deflector and quartzoid bulb. K-factor 80	No	398		
I2.02	UL listed/Fm Approved 150mm diameter Monitored butterfly valve as GLENFIELD incorporating strainer and flanges	No	0		
I2.03	200mm Diameter tubing in wall and ceiling Complete with Coupling	LM	10		
I2.04	150mm Ditto	LM	42		
I2.05	100mm Ditto	LM	82		
I2.06	75mm Ditto	LM	655		
I2.07	65mm Ditto	LM	35		
I2.08	50mm Ditto	LM	55		
I2.09	40mm Ditto	LM	50		
I2.10	32mm Ditto	LM	110		
I2.11	25mm Ditto	LM	486		
I2.12	150 x 150 x 150 x 150mm Cross Tee	No	20		

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
I2.13	100 x 100 x 100 x 100mm Tee	No	4		
I2.14	150 x 150 x 150mm Tee	No	0		
I2.15	100 x 100 x 75mm Ditto	No	6		
I2.16	100 x 100 x65mm Ditto	No	2		
I2.17	100 x 100 x 50mm Ditto	No	4		
I2.18	75mm Equal Tee	No	180		
I2.19	65mm Ditto	No	6		
I2.20	50mm Ditto	No	14		
I2.21	40mm Ditto	No	6		
I2.22	32mm Ditto	No	50		
I2.23	25mm Ditto	No	105		
I2.24	150 x100mm reducer	No	4		
I2.25	100x 75mm Ditto	No	8		
I2.26	100x 65mm Ditto	No	3		
I2.27	100x 50mm Ditto	No	3		
I2.28	100x40mm Ditto	No	8		
I2.29	75x 65mm Ditto	No	8		
I2.30	75x 50mm Ditto	No	8		
I2.31	75x 25mm Ditto	No	168		

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
I2.32	65x 50mm Ditto	No	5		
I2.33	50x 40mm Ditto	No	30		
I2.34	50x 32mm Ditto	No	4		
I2.35	50x 25mm Ditto	No	4		
I2.36	40x 32mm Ditto	No	4		
I2.37	40x 25mm Ditto	No	4		
I2.38	32x 25mm Ditto	No	120		
I2.39	25x 20mm Ditto	No	90		
I2.40	150mm Bend	No	8		
I2.41	100mm Ditto	No	3		
I2.42	75mm Ditto	No	10		
I2.43	65mm Ditto	No	2		
I2.44	50mm Ditto	No	2		
I2.45	40mm Ditto	No	2		
I2.46	32mm Ditto	No	2		
I2.47	25mm Ditto	No	258		
I2.48	25mm plugs with 15mm threaded screws for sprinkler heads	No	398		
I2.49	150mm diameter check valve as GLENFIELD incorporating strainer and flanges	No	3		

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
I2.50	100mm Ditto	No	12		
I2.51	150mm Diameter Unions	No	2		
I2.52	100mm Ditto	No	14		
I2.53	75mm Ditto	LM	46		
I2.54	65mm Ditto	LM	7		
I2.55	50mm Ditto	LM	11		
I2.56	40mm Ditto	LM	10		
I2.57	32mm Ditto	LM	22		
I2.58	25mm Ditto	LM	97.2		
I2.59	150mm flanges	No	24		
I2.60	100mm Ditto	No	48		
I2.61	75mm Ditto	No	14		
I2.62	65mm Ditto	No	24		
I2.63	50mm Ditto	No	14		
I2.64	40mm Ditto	No	48		
I2.65	Pipe Hangers As Hira walraven,Ul Listed,BIS Heavy Duty Industrial Clamps, 5" Locking Bolts, HD1501 (M8/10, M10/12 (cat No. BUP 1000),BIS Rubber Lined Split Clamp,All hangers to be sound insulating as DN 4109, and 800mm raw bolt. All the hangers to be equaly spaced at a distance of 600mm.for the entire length of the pipeline	item	0		
a	200mm Diameter tubing in wall and ceiling as desribed above	No	3.3333		

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
b	150mm ditto	No	14		
c	100mm Ditto	No	27.333		
d	75mm Ditto	No	218.33		
e	65mm Ditto	No	11.667		
f	50mm Ditto	No	27.5		
g	40mm Ditto	No	25		
h	32mm Ditto	No	55		
i	25mm Ditto	No	243		
I2.66	Sprinkler system flow switch and drain	No	1		
I2.67	Allow for painting to Engineers requirement and colour coding to BS 1710: 1984 (1991).	item	1		
I2.68	Allow for testing the heads of the Sprinkler installation system during progress of the works and again at the completion to the satisfaction of the Engineer and the Local Authority	Item	1		
I2.69	Allow for other items not listed above but necessary for the correct and satisfactory functioning of the sprinkler system (please Specify here Below)	Item	1		
I2.70	contigency				600,000
I2.71	**Total for sprinkler Installations c/f to Price Collection page**				

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)

I3 WET RISER INSTALLATIONS

Supply, deliver, install test and commisstion and paint the appropriate colour code (signal red) the following fire fighting pipe work. Materials for piping and the standards covering these installations shall be as described in NFPA 13. Black or galvanized steel pipe shall be either ASTM A 53 seamless grooved for pipe bigger than 65mm while 50mm and below to be electric welded, Grade A or B. The Pipe shall be Schedule 40 and above. ***All valves, pressure gauges, pressure switches, meters and any othe accessories must be ULlisted and/or FM approved.***

I3.01	150mm Diameter tubing in wall and ceiling Complete with couplings	LM	106		
I3.02	100mm Ditto	LM	7		
I3.03	150 x 150 x 150mm Tee	No	14		
I3.04	150 x75mm reducer	No	14		
I3.05	75x 65mm Ditto	No	14		
I3.06	75x 50mm Ditto	No	14		
I3.07	50x 25mm Ditto	No	14		
I3.08	150mm Bend	No	17		
I3.09	65mm Ditto	No	14		
I3.10	50mm Ditto	No	14		
I3.11	25mm Ditto	No	14		
I3.12	150mm flanges	No	38		
I3.13	75mm Ditto	No	28		
I3.14	Pipe Hangers As Hira walraven,Ul Listed,BIS Heavy Duty Industrial Clamps, 5" Locking Bolts, HD1501 (M8/10, M10/12 (cat No. BUP 1000),BIS Rubber Lined Split Clamp,All hangers to be sound insulating as DN 4109, and 800mm raw bolt. All the hangers to be equaly spaced at a distance of 600mm.for the entire length of the pipeline				

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
a	150mmDiameter tubing in wall and ceiling as desribed above	No	35		
b	100mm Ditto	No	2		
c	75mm Ditto	No	5		
d	50mm Ditto	No	5		
e	32mm Ditto	No	5		
f	25mm Ditto	No	5		
I3.15	Sprinkler system flow switch and drain	No	1		
I3.16	Allow for painting to Engineers requirement and colour coding to BS 1710: 1984 (1991).	item	1		
I3.17	Testing and Commissioning the hydrant installation system during progress of the works and again at the completion to the satisfaction of the Engineer and the Local Authority	Item	1		
I3.18	Allow for other items not listed above but necessary for the correct and satisfactory functioning of the sprinkler system (please Specify here Below)				

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)

HOSEREEL INSTALLATIONS

I3.19	50mm gate valve as Pegler	No	14		
I3.20	25mm Ditto	No	14		
I3.21	50mm pipe union	No	14		
I3.22	25mm Ditto	No	14		
I3.23	25mm nipples	No	14		
I3.24	20mm nipples	No	14		
I3.25	Automatic, recessed swing type hosereel . Hosereel shall have the following characteristics -Full 180 degree swing, delivery valve 25mm BSP inlet 25mmx30m long hose pipe -Mild steel feed pipe to BS1387 class "B." The fire hosereel must be UL listed/FM approved	No.	14		
I3.26	Allow for painting to Engineers requirement and colour coding to BS 1710: 1984 (1991).	item	1		
I3.27	Testing and Commissioning	item	1		
I3.28	Allow for other items not listed above but necessary for the correct and satisfactory functioning of the sprinkler system (please Specify here Below)	item	1		
I3.29	Contigency	item			253,245
I3.30	**Total for hosereels system c/f to price Collection page**				

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)

Price Collection Page

I1	Portable fire Extinguisher Supply and install				
I2	Water Sprinkler Supply and install				
I3	Wet riser installations and Hosereel installations				
I4	**Total Cost of warehouse firefighting C/F to grand Summary page**				

Sanitary supply and fix,plumbing,internal drainage and solar water heating for office block summary

Item	Description	Cost (kshs)
1	Sanitary ware supply and fix	
2	Internal plumbing and drainage and Basement Drainage	
3	Rain water	
4	Fire fighting	
5	**Total for sanitary,plumbing,drainage,rainwater & firefighting Without VAT c/f to Grand Price Summary**	

BILL 3

OFFICE BLOCK

PLUMBING & DRAINAGE

FIT OUTS

INSTALLATIONS

J SANITARYWARE & FITTINGS -OFFICE BLOCK -FIX

Sanitaryware & Fittings including all materials and jointings, waste and overflow pipe fittings:- Note all sanitary fittings are coloured to project architect specific colour.

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
J1.01	**WC Suits:** Duravit D-Code floor back to wall washdown model horizontal outlet model-N0. 221009..00 (white in colour), accessory are toilet seat and cover without softclose automatic closure, hinges stainless steel Model No. 0067310000 with all fixing included, complete with docol WC concealead flushvalve, bend connectorbend connector. or equal and approval	No.	7		
J1.02	**Disabled suite:** Water closet pan Close-coupled as Twyford-doc.m Value Pack with white grab rails cat no. PK8184WH horizontal outlet. Doc.M value cistern, fittings and standard lever, Doc.M seat ring,stainless steel hinge,Hand rinse with no overflow, no chainstay ,Spray mixer, lever operated mixing valve -thermostatic TMV3 . Doc.M support rail (5 required). Doc.M hinged support rail and toilet roll holder. Wall hangers(pair), Grid waste, pan fixings, cistern cover clips, P trap outlet connector Cat.No WF1240WH.	No.	0		
J1.03	**Toilet roll holder:** Duravit D-Code toilet roll holder cat no. #009926 bend connector. orr equal and approval	No.	7		
J1.04	**Toilet brush Holder:** Duravit D-Code toilet brush cat no. #009927 bend connector. orr equal and approval	No.	7		

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
J1.05	**Wash hand basin:** Duravit D-Code vanity countertop basin 545mm, with overflow,with tap platform Model No. 033754..00 (white in colour) with a fixing, complete with one Non Conculsive time delay tapis or docol basin tap, chrome plated waste Ø 32mm and chrome plate bottle trap. Angle valves and any other necessary accessories.bend connector. or equal and approval	No.	10		
J1.06	**Mirror:** 900x600mm silver plated plain glass mirror with bevelled edges and fixed with chrome plated screws and dome shaped cover or equal and approval	No.	10		
J1.07	**Coat Hooks:** Duravit Coat hooks. EQUIVALENT AS	No.	7		
J1.08	**Soap dispenser:** Press type Liquid soap dispenser made out of enamal coat mild steel as Mediclinic or equal and approval	No.	7		
J1.09	**Hand driers:** No Touch Vandal Resistance Automatic Hand drier as Mediclinic or equal and approval	No.	6		
J1.10	**Urinal bowl:** Urinal bowls as Duravit D-code cat no. 082930007 complete with dividers, 32mm Chrome plated hinged domed outlet grating, 32mm chrome plated urinal bottle-trap, Complete with a Concealed flush valve as Rocca Model or Equal and approved	No	0		

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
J1.11	**Urinal sensor as Geberit:** sensor flush valve for urinal HyTronic Cat. No. 115.802.HC.1	No	0		
J1.12	**Electronic air fresheners** Automatic air freshener dispensing system and odor neutralizing to control an area more than 800 cuft refills lasting upto 100days, with proactive display to indicate refill or batteries need replacemen as mediclinic dispenser with timer & sensor or equal and approval	No	6		
J1.13	**Paper towel dispensers** Decorative wall mounted paper towel dispensers 230mm high, 300 mm wide and 100mm deep with easy tear holder and a spring loaded mechanism to release one sheet per pull. Removable lid and opens sides for towel level viewing and easy refilling complete with all accessories including a foot operated stainless steel disposed towel bin with cover (300mm high and 300mm diameter) as Mediclinic or equal and approval	No	6		
J1.14	**Utility /Cleaners sink:** Utility basin as stark 3 without oveflow, without tap platform,with grid chrome dimensions of 480x425mm Model No. 031348..00 (white in colour) and all accessory as grid,chrome,fixing Model No. 0050011000., include with grating cat No. FC1034WH, Bib tap as tapis or equal and approval	No.	0		

Item	Description	Units	Qty	Rates (Kshs.)	Costs (Kshs)
J1.15	**Kitchen Sink:** Single bowl single drainer Stainless Steel kitchen sink c/w chrome plated 1½" chrome plated bottle trap, 40mm chrome plated chain waste fitting(unslotted) and kitchen sink mixer as wall type cat no. EX5002/CH or equal and approval	No.	0		
J1.16	**Instant Kitchen Water heater:** Undersink instantaneous heater of capacity 10litres and rating 3kw complete with adjustable thermostat, 40'C temperature lock,standard spout and valve, taps, mixer and any other necessary accessories as ariston or equal and approval	No.	0		
J1.17	**Shower fittings:** Cobra Stella shower set (mixer, overhead shower c/w arm with FxF stoptaps (3338ST026/065 CxC). bend connector.or equal and approval	No.	2		
J1.18	**Shower tray:** Concealed Shower tray as Duravit D-Code tray 900x900mm c/w 40mm b.s.p waste and trap cat no. 720063.or equal and approval	No.	2		
J1.19	Contigency	No.			200,000
J1.20	**Total for sanitaryware & fittings c/f to price collection page**	No.			

DRAINAGE-FIXTURES

K Basement Sump pumps drainage

uPVC conventional system for soil waste & rain water (ASTRAL Ultradrain) for pressure drainage & application to BS 4514 and 5225 with fittings fixed in accordance to the manufacturer's printed instructions and BS 5572 and manufactured by "KEY TERRAIN" as described. All uPVC branches,Tees,reducing Tees,reducers etc. are to be formed in accordance to the manufacturer's printed instruction. The installations to have the various sizes of connectors, adaptors,sockets,reducers holdbats, clips etc. as required for satisfactory functions.

Item	Description	Units	fifth	Costs (Kshs)	Rates (Kshs.)
K1.01	100mm Diameter tubings on wall	Lm	18		
K1.02	100mm non-return valves	No	4		
K1.03	100mm gate valves	No.	4		
K1.04	100mm Bends	No.	4		
K1.05	100mm Diameter Unions	No.	4		
K1.06	Submersible drainage pump as Grundfos AP35. The pump shall have a flowrate of 10m3/h against a head of 10m The pump shall be supplied complete with control panel, pressure vessel, float switches, coupling, flanges, connectors, joints, etc connect to the outlet pipe work and also where necessary pipes clips, holderbats plugged and screws and brackets. EQUIVALENT AS	No.	1		
K1.07	**Total for Basememt Sump pumps Drainage c/f to Price collection page**				

Price Collection Page

K1	Basement Drainage	
K2	Contigency Sum	8,720
K3	**Total for Plumbing & Drainage c/f Price collection Page**	

Sanitary supply and basement drainage for office summary-fit		
Item	**Description**	**Cost (kshs)**
1	Sanitary ware supply and fix	
2	Basement Drainage	
3	**Total for sanitary and basement drainage Without VAT c/f to Grand Price Summary**	

SANITARY FITTING PLUMBING DRAINAGE AND FIRE FIGHTING FOR WAREHOUSE AND OFFICE BLOCK GRAND PRICE SUMMARY PAGE

ITEM	DESCRIPTION	Costs Ksshs
0	Preliminaries and General conditions	
1	Warehouse Sanitary Plumbing, drainage solar water heating,site reticulation and fire Installation core and shell	
2	Office Block Sanitary Plumbing, drainage and fire Installation core and shell	
3	Office Block Sanitary Plumbing and drainage Installation fit out	
4	External Water reticulation	
5	Allow for the factory material inspection and approvals (the Fire Pumps Equipment and the Insulation panel) for 2No Project managers 2No Client and 2No Engineers. The cost shall cover Air Flight, accormodation and meal and subsistence allowance as per SRC guidelines	
6	Sum for Completion documents: Comprising workshop drawings, manufacturer's technical product catalogues, users manuals, maintenance manuals, as installed drawings, test certificates, user training signed off chart etc.{ ***NOTE: Penultimate Valuation will not be paid until these are fully availed & signed off by the engineer*** }	
7	Sum for training of client / user (At least 5 No. Users). The trained personnel must sign against the items they were trained on and this submitted to the engineer as part of completion document	2,000,000
8	Sum for testing, system configuration & commissioning of the entire installations set complete with all accessories, interconnections, controls & activation and the necessary programing.	
9	12 months comprehensive maintenance from date of practical completion. (Covering parts and services)	
10	Total Without VAT	
11	Add: 16% VAT including all PC sums & Contingencies	
12	**Total for Mechanical Installations c/f to form of tender**	

Total amount in words: Kenya shillings_____

Name of firm / company _____

Official rubber-stamp _____

P.I.N. No.: _____V.A.T. Reg. No. : _____

Signed by: _____ Date _____